



Gendering Human Development Indices:

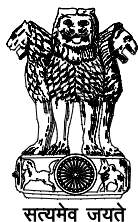
Recasting the Gender Development Index and Gender Empowerment Measure for India



Towards a new dawn

MINISTRY OF WOMEN AND CHILD DEVELOPMENT
GOVERNMENT OF INDIA

2009



Gendering Human Development Indices:

Recasting the Gender Development Index and Gender Empowerment Measure for India



Indian Institute of
Public Administration



Towards a new dawn

Ministry of Women and Child Development
Government of India



India

United Nations
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Foreword

The goals of human development cannot be achieved without the development and empowerment of women. Despite over 60 years of Independence, severe gender discrimination is pervasive. Inclusive growth and development cannot be achieved by India if our women do not have access to education, health care and productive resources.

However, the reality that women face is that of disparities in access to and control over resources.

UNDP's human and gender development and empowerment indices have shifted the development debates and attention from Gross Domestic Product to multi-dimensional variables in measurement of development. However, it was felt that the Gender-related Development Index (GDI) and a Gender Empowerment Measure (GEM) developed by UNDP should be recast to reflect Indian realities through inclusion of additional indicators. I am glad that the Ministry of Women and Child Development has taken the initiative and it gives me great pleasure to present the First Report on "Gendering Human Development Indices : Recasting The Gender Development Index and Gender Empowerment Measure for India". The Report estimates human and gender development indices for India and the 35 States/UTs within the limitations of data availability. It complies and presents HDI, GDI and GEM for India and the 35 States/UTs for two periods of time, 1996 and 2006.

I commend the hard work put in by the project team and the efforts by MWCD, IIPA and UNDP in coming together to execute this project and provide a comparative picture of the State/UT wise disparities in gender development and empowerment. We hope that States/UTs will take cognizance of this and take necessary action to bridge the gender divide in opportunities and attainments. These indices must be used as tools to analyse and understand the underlying factors responsible for creating the gender divide in opportunities and empowerment and necessary steps taken in planning, policies, programmes for bridging these gaps.


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Preface

Inclusive growth requires that we ensure the overall survival, development, protection and participation of women of India. Gender development and empowerment indices are some of the tools that can be used to determine the extent to which we have succeeded in achieving inclusive growth. Recommendation 122 of the National Statistical Commission Report 2001 states among other things the following: “develop appropriate methodology for computing HDI and GDI at State level. Studies should be conducted using gender related data to highlight existing gender disparities.”

While UNDP has constructed HDI, GDI and GEM for several countries of the world including India, these have been critiqued on several grounds including the fact that they have been developed from a northern perspective, and did not incorporate the perspective of the south. While some attempts have been made in the past to compile HDI, GDI and GEM none of these have been prepared for all the 35 States/ UTs or for any of the years pertaining to the last decade.

In 2007, Ministry of Women and Child Development took the decision to recast HDI, GDI and GEM for India and calculate the indices for States/UTs. UNDP provided support for this initiative with technical and financial assistance through the MWCD-UNDP project for “Promoting Gender Equality”. Indian Institute of Public Administration (IIPA), New Delhi was identified as the Technical Collaborating Institution for the task. A Technical Advisory Committee was constituted for this purpose and three brainstorming workshops were held to decide on the indicators and methodology to be used to construct the indices. This initiative has culminated in the First GDI and GEM Report for India and the States/UTs titled “Gendering Human Development Indices: Recasting The Gender Development Index and Gender Empowerment Measure for India.”

Contd.....

The HDI, GDI and GEM scores attained by the 35 States/UTs and changes in them over time show us the extent to which a state/UT has progressed in translating its growth into a better quality of life for both women and men. Gaps between HDI and GDI reflect the existence of gender disparities in translating development into equitable outcomes. The Report presents a large number of valuable tables that reflect the extent of Gender differentials in health, education, income earning opportunities, access to resources, participation in Parliament, representation in various decision making bodies and officials in the National Services are clearly visible from the national statistics and the indices that have been compiled and presented in this Report.

A large number of data gaps have constrained the estimation of GDI and GEM. It is hoped that data producing agencies will take necessary action to bridge these serious gaps at the earliest.

I congratulate MWCD, IIPA and UNDP for preparing this report and place on record my appreciation for the sincere and dedicated efforts that Ms. S. Jeyalakshmi and Professor Aasha Kapur Mehta have put into preparing this valuable Report. I hope the Governments of all the States/UTs will utilise the gender differentials revealed by this Report and take urgent action towards fostering gender equity in all spheres of development.


(Anil Kumar)

Acknowledgements

The project of compilation of GDI and GEM for India and States is an initiative of MWCD which started in the year 2007 under the MWCD-UNDP umbrella project of “Promoting Gender Equality”. The Indian Institute of Public Administration was identified as the National Professional Institution for this activity. The Report on “Gendering Human Development Indices: Recasting the Gender Development Index and Gender Empowerment Measure for India” is the culmination of this project. We would like to place on record the constant support and encouragement received from Smt. Deepa Jain Singh, ex-Secretary, Ministry of Women and Child Development, Shri Anil Kumar, Secretary, MWCD, Ms. Vijayalakshmy K. Gupta, Additional Secretary, MWCD, Ms. Parul Debi Das, ex-Joint Secretary MWCD, Dr. P.L. Sanjeev Reddy, ex-Director of IIPA and Shri B.S. Baswan, Director, IIPA.

We are grateful to Dr. Pronab Sen, Secretary Ministry of Statistics and Programme Implementation, Prof. Amitabh Kundu, Jawaharlal Nehru University and Dr. S.K. Nath, ex-Director General, Central Statistical Organisation for their expert advice regarding choice of indicators and methodology and to all the members of the Technical Advisory Committee (TAC) who participated in the three brainstorming TAC workshops, especially the representatives of Central Statistical Organization, Planning Commission, the National Sample Survey Organization, the Ministries of Health and Family Welfare, Urban Development, Rural Development, Office of the Registrar General of India, International Institute of Population Sciences, Mumbai, expert economists Prof. Devaki Jain, Prof. Indira Hirway, Prof. Amita Majumdar, Prof. K. Seeta Prabhu, Prof. Dolly Arora and all invitees from MWCD, UNDP and UNIFEM for their valuable inputs during the TAC workshops and comments on the draft report. Shri B.S. Baswan, Director IIPA, addressed the Second TAC workshop. Ms. Vijayalakshmi K. Gupta, Additional Secretary, MWCD joined the Ministry of MWCD in November, 2008 and chaired the Third TAC workshop. Prof. Aasha Kapur Mehta, Member Secretary, organised all the three TAC workshops at IIPA.

Estimation of GDI and GEM for India would not have been possible without the data and support provided by a large number of Ministries, Departments and State Governments. We are especially grateful to Dr. V.K. Agnihotri, Secretary General, Rajya Sabha Secretariat, Ms. Rekha Bhargava, Secretary, Ministry of Parliamentary Affairs, Shri R.K. Mecolt Singh, Committee Officer, Rajya Sabha Secretariat, Shri Shiva Nand, Committee Officer, Lok Sabha Secretariat; Shri R.R. Pandey, Secretary, Election Commission of India; Shri P.K. Mishra, Additional Secretary, Shri A.K. Singal, Joint Secretary, Ministry of Personnel, Public Grievances and Pension, Government of India, Shri Pratap Nath Ray, Joint Secretary and Shri Rajender Kumar, Section Officer, Ministry of Home Affairs, Shri P.R. Mohanty, Director General of Forests, Ministry of Environment and Forests;

Ms. Suman Prashar (ex-Officer of RGI) and Mr. D.K. Dey (Office of RGI), Banking Statistics Division of RBI; Prof. Ravi Srivastava and Ms. Shobha Tekumalla, National Commission for Enterprises in the Unorganised Sector; Shri M.S. Bala Krishna Rao, Director, Directorate of Economics and Statistics, Government of Andhra Pradesh, Ms. Leela Bhatnagar, Director and Shri R.K. Pandey, Deputy Director, Directorate of Economics and Statistics, Government of Rajasthan.

In MWCD, Ms. R. Savithri, ex-Director, Ms. Sunitha Bhaskar, ex-Joint Director, Ms. Pratima Gupta, Deputy Director and Ms. Anjali Rani, ex-Project Associate were actively involved in the Project and rendered useful assistance to me.

Prof. Aasha Kapur Mehta headed the project at IIPA and worked with Research Officers Ms. Parma Adhikari, Shri Sanjay Pratap and Shri Saikat Banerjee, to collect, compile and analyse the data and integrate it into this valuable report. At earlier stages of the project, the research officers, Ms. Brotati Biswas and Shri Shantanu Mukherjee provided research support to the project with inputs from Ms. Trishna Satpathy.

We acknowledge the technical and financial support provided by UNDP for undertaking this project.

We hope that the Government of India and State Governments will use the estimates of HDI, GDI and GEM and the dimensions that comprise these to identify the gender based disparities that exist and take corrective action through policies, programmes and schemes that will enable achievement of gender just and equitable development.



Smt. S Jeyalakshmi
Statistical Adviser MWCD and
Chairperson Technical Advisory Committee, GDI and GEM Project

List of Acronyms

AGMUTs	Arunachal Pradesh, Goa, Mizoram and Union Territories
AIIC (T)	All India Indira Congress (Tiwari)
AM	Assam and Meghalaya
AYUSH	Ayurveda, Yoga, Unani, Siddha and Homeopathy
BJP	Bharatiya Janta Party
BSP	Bahujan Samaj Party
CPI	Communist Party of India
CPM	Communist Party of India (Marxist)
CSO	Central Statistical Organisation
EDEP	Equally Distributed Equivalent Percentage
EdI	Index of Knowledge
EI	Index of Economic Participation & Decision-making Power
GDI	Gender-related Development Index
GDP	Gross Domestic Product
GEI	Gender Equality Index
GEM	Gender Empowerment Measure
GP	Gram Panchayat
HDI	Human Development Index
HDRs	Human Development Reports
HI	Index of a Long and Healthy Life
HIV/AIDS	Human Immuno-deficiency Virus/Acquired Immuno-deficiency Syndrome
HPI	Human Poverty Index
IAS	Indian Administrative Service
ICT	Information and Communication Technology
IFS	Indian Forest Service
IIPA	Indian Institute of Public Administration
IMR	Infant Mortality Rate
INC	Indian National Congress
IPS	Indian Police Service

JD	Janta Dal
JP	Janta Party
LE 1	Life Expectancy at age 1
LEB	Life Expectancy at Birth
MMR	Maternal Mortality Rate/Ratio
MT	Manipur and Tripura
MWCD	Ministry of Women and Child Development
NCT Delhi	National Capital Territory of Delhi
NCP	Nationalist Congress Party
NDP	Net Domestic Product
NFHS	National Family Health Survey
NHDR	National Human Development Report
NSDP	Net State Domestic Product
NSS	National Sample Survey
NSSO	National Sample Survey Organisation
NTFP	Non-Timber Forest Produce
PI	Index of Political Participation & Decision-making Power
PoERI	Index of Power over Economic Resources
PPP	Purchasing Power Parity
PRIs	<i>Panchayati Raj</i> Institutions
SAP	Samta Party
SNA	System of National Accounts
SPBs	State Planning Boards
SRS	Sample Registration System
TAC	Technical Advisory Committee
ULBs	Urban Local Bodies
UNDP	United Nations Development Programme
UTs	Union Territories
WFPR	Work Force Participation Rate
YI	Index of A Decent Standard of Living
ZP	<i>Zilla Parishad</i>

Important Highlights

This report compiles and presents HDI, GDI and GEM for India and the States/UTs for the years 1996 and 2006.

- The Dimensions used for computing HDI and GDI are:
 - ♦ Dimension 1: 'A Long and Healthy Life'
 - ♦ Dimension 2: 'Knowledge' and
 - ♦ Dimension 3: 'A Decent Standard of Living'
- Indicators for Dimension 1, 'A Long and Healthy Life' are i) Infant Mortality Rate and ii) Life Expectancy at age 1 (negative index for infant mortality rate converted to a positive index by subtracting the value of the index from 1).
- Indicators for Dimension 2, 'Knowledge' are i) 7 + Literacy Rate and ii) Mean Years of Education (15+ age group).
- The indicator for Dimension 3, 'A Decent Standard of Living' is Estimated Earned Income per capita per annum.
- The HDI score for India was 0.530 for 1996 and 0.605 for 2006.
- For 2006, the HDI score was highest for the Union Territory of Chandigarh at 0.784 and lowest for Bihar at 0.507.
- The GDI score for India was 0.514 for 1996 and 0.590 for 2006.
- For 2006, the GDI score was highest for the Union Territory of Chandigarh at 0.763 and lowest for Bihar at 0.479.
- The Dimensions used for computing GEM are:
 - ♦ Dimension 1: 'Political Participation & Decision-making Power'
 - ♦ Dimension 2: 'Economic Participation and Decision-making Power'
 - ♦ Dimension 3: 'Power Over Economic Resources'
- Indicators for Dimension 1, 'Political Participation & Decision-making Power' are: i) % Share of Parliamentary Seats (elected); ii) % Share of Seats in Legislature (elected); iii) % Share of Seats in *Zilla Parishads* (elected); iv) % Share of Seats in *Gram Panchayats* (elected); v) % Candidates in Electoral Process in National Parties in the Parliamentary election and vi) % Electors Exercising the Right to Vote in the Parliamentary election.

- Indicators for Dimension 2, 'Economic Participation and Decision-making Power' are: i) % Share of Officials in service in Indian Administrative Service, Indian Police Service and Indian Forest Service; and ii) % Share of Enrolment in Medical and Engineering Colleges.
- Indicators for Dimension 3, 'Power Over Economic Resources' are: i) % Female/Male with Operational Land Holdings; ii) % Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh); iii) Female/Male Estimated Earned Income Share.
- While estimating GEM, wherever data was not available for a specific indicator, the Dimension score was determined by dividing the total score for the remaining indicators by the number of indicators for which data was available.
- The GEM score for India was 0.416 for 1996 and 0.497 for 2006.
- For 2006 the GEM estimate was highest for NCT Delhi at 0.564 and lowest for Nagaland at 0.289.
- An attempt was made to estimate HDI, GDI and GEM for two districts, Mahbubnagar and Jodhpur but was constrained by severe data gaps.
- The prominent data gaps that constrain the computation of indices have been presented in the report.
- The HDI, GDI and GEM scores attained by States/UTs need the attention of stake-holders at all levels so that gender-based disparities in different facets of development and empowerment are rectified through plans, policies, interventions.

Introduction

I. Introduction

Gender relations are the key to understanding the inequalities between men and women. These inequalities are expressed in many ways - explicit and implicit. The explicit measures are well known and are revealed in statistics depicting differences in the sex ratio, child infanticide, literacy rates, health and nutrition indicators, wage differentials and ownership of land and property. The implicit relations are embedded in power relations and hierarchies and are more difficult to measure. Located in the household, in custom, religion and culture, these intra-household inequalities result in unequal distribution of power, unequal control over resources and decision-making; dependence rather than self-reliance; and unfair, unequal distribution of work, drudgery, and even food. For governments and concerned citizens seeking to redress these inequalities, gender disaggregated data and indices are a means of determining the issues that they must address and monitor to determine the effectiveness of their actions.¹ Gender disaggregated data and indices are tools that can be used to identify gender inequalities, determine the issues that must be addressed, take steps to redress the inequalities, provide feedback on the effectiveness of actions and re-prioritise allocation of resources.

United Nations Development Programme's (UNDP) annual Human Development Reports (HDRs) have successfully shifted the development debates and attention from uni-dimensional, income or Gross Domestic Product based indices to the inclusion of non-income and multi-dimensional variables in measurement of development. The Human Development Reports were preceded by efforts of several social scientists to devise more welfare-sensitive measurements or indices of development that incorporate variables other than income. For instance, Morris² tried to measure Physical Quality of Life based on an average of three indicators, basic literacy rate, infant mortality, and life expectancy at age one. Similarly, Drewnovsky and Scott³ combined a large set of social variables in the areas of nutrition, shelter, health, education, leisure, security, and social and physical environment to prepare a Unitary Index. In each of these indices the effort is to use one or more indicators to capture attainment with regard to different dimensions of development.

UNDP's Human Development Reports draw attention to the fact that human development is a process of enlarging people's choices. The Human Development Index (HDI) introduced by UNDP in 1990 is a simple average of three dimension indices that

¹ Aasha Kapur Mehta (1996), "Recasting Indices for Developing Countries: A Gender Empowerment Measure", *Economic and Political Weekly*, October 26.

² Morris D. Morris and Michelle B. McAlphin (1982), "Measuring the Condition of India's Poor: The Physical Quality of Life Index", Promilla and Co., New Delhi.

³ Drewnowski, J. and W. Scott. 1966. *The Level of Living Index*: UNRISD, Geneva cited in www.arab-hdr.org/publications/other/undp/hdr/1998/lebanon/biblio.pdf.

measure average achievements in a country with regard to 'A long and healthy life', as measured by life expectancy at birth; 'Knowledge', as measured by the adult literacy rate and the combined primary, secondary and tertiary gross enrolment ratio; and 'A decent standard of living', as measured by estimated earned income in Purchasing Power Parity (PPP) US\$. However, a nation "does not have to be affluent to treat women and men equally."⁴

The goals of human development cannot be achieved without the development and empowerment of women. However, the reality that women face is that of disparities in access to, and control over, resources. The need to include gender sensitive measures of human development was recognised as early as the second HDR. Therefore, in 1995, the UNDP introduced two new indices: a Gender-related Development Index (GDI) and a Gender Empowerment Measure (GEM).

The Gender-related Development Index adjusts the average achievements in the same three dimensions that are captured in the HDI, to account for the inequalities between men and women. The Gender Empowerment Measure focuses on opportunities and captures gender inequality in three key areas: 'Political participation and decision-making power', as measured by women's and men's percentage shares of parliamentary seats; 'Economic participation and decision-making power', as measured by two indicators – women's and men's percentage shares of positions as legislators, senior officials and managers and women's and men's percentage shares of professional and technical positions; and 'Power over economic resources', as measured by women's and

men's estimated earned income (PPP US\$). The GEM was intended to measure women's and men's abilities to participate actively in economic and political life and their command over economic resources. UNDP's HDRs have estimated HDI each year since 1990 and GDI and GEM since 1995.

Human and gender development indicators are tools that have been successfully used for advocacy, ranking of geographical spaces, and as a tool for research to capture improvement in human well-being more reliably than per capita income. Further, these can be used in the political sphere as they focus on social sectors, policies and achievements.⁵ As Johansson⁶ points out, among the strengths of the HDI are its policy relevance and acceptability based on:

- Conceptual clarity that facilitates its power as a tool of communication;
- Reasonable level of aggregation;
- Use of universal criteria and variables; and
- Use of standardised international data explicitly designed for comparison.

UNDP HDR 1996 and 2006

HDR⁷ 1996 ranked 174 countries of the world based on their scores on HDI. 57 countries attained high Human Development with HDI scores at or above 0.804. Canada was ranked first on HDI with a score of 0.951. However Canada ranked second on GDI (out of 137 countries) with a score of 0.927 and sixth on GEM (out of 104 countries) with a score of 0.685. Sweden was first on GDI with a score of 0.929 (but ninth on HDI) and Norway had the high-

⁴ UNDP Human Development Report (1994), Oxford University Press, New Delhi, p. 15.

⁵ Suraj Kumar, Presentation on Measuring Human Development, Indian Institute of Public Administration, New Delhi, January 2007.

⁶ Claes Johansson, (2004) Presentation on The Human Development Indices at Oxford, Sep 14 2004; United Nations Development Programme, Human Development Report Office.

⁷ UNDP, (different years). Human Development Report, Human Development Report Office, Oxford University Press, New York.

est score for GEM at 0.786, (but was ranked fifth on HDI and third on GDI). 69 countries, with ranks from 58 to 126 and HDI scores between 0.796 and 0.504 were classified as having achieved medium Human Development. 48 countries (ranks 127 to 174) had HDI scores below 0.504 and were classified as having low Human Development. In 1996, India ranked 135th out of 174 countries on HDI with a score of 0.436 and was placed among the countries with low human and gender development. India's GDI score was 0.41 and GDI rank was 103 out of only 137 countries for which GDI was estimated. GEM was estimated for only 104 countries and India ranked 93 on GEM with a very low score of 0.235.

HDR 2006 estimated HDI for 177 countries. Norway had the highest rank on HDI, GDI and GEM with scores of 0.965, 0.962 and 0.932 respectively. 63 countries had high levels of Human Development with scores ranging from 0.965 to 0.800. 83 countries had medium levels of Human Development with ranks from 64 to 146 and scores from 0.798 to 0.500. 31 countries were classified as having low Human Development with scores from 0.495 to 0.311. In 2006, India ranked 126th out of the 177 countries with an HDI score of 0.611, or among Medium Human Development countries. India's GDI rank was 96 out of 136 countries for which GDI was estimated and with a score of 0.591. GEM was estimated for only 75 countries in 2006 and was not estimated for India.

World Economic Forum: Gender Gap Index

The World Economic Forum has estimated the Gender Gap Index to reflect patterns of inequality between men and women with regard to Economic Participation and Opportunity, Educational Attainment,

Table 1.1: World Economic Forum: Gender Gap Index

Area of Gender Inequality	India's Rank out of 130	India's score
Economic Participation and Opportunity	125	0.3990
Educational Attainment	116	0.8452
Health and Survival	128	0.9315
Political Empowerment	25	0.2484
Global Gender Gap Index	113	0.6060

Source: World Economic Forum (2008). *The Global Gender Gap Report*, Geneva, Switzerland, p. 11.

Health and Survival and Political Empowerment. India ranked 113 out of the 130 countries on the Gender Gap Index 2008 with a score of 0.606 (Table 1.1).

It needs to be noted that India ranked 25th in the world on Political empowerment despite a low score of 0.2484 which reflects the low level of women's political empowerment in the world and 128th out of 130 countries on Health and Survival despite a relatively high score of 0.9315.

Critiquing UNDP's GDI and GEM

In a workshop on "Building a Framework for Measuring Gender Equity" organised by Singamma Srinivasan Foundation at Bangalore in 1996, a group of Indian women economists⁸ argued that while it was commendable that UNDP had produced a report which was more women centred, the GDI and GEM developed by UNDP needed to be recast to realistically capture the gender gaps in development and empowerment in the Third World. It was argued that these indices had been developed from a northern perspective, and did not incorporate the perspective of the south. GDI did not reflect measures that were required in countries with high unemployment, high levels of poverty and inequality. Similarly, for GEM to be useful it must be created out of institutions which em-

⁸ The Indian Women Economists were Ahalya Bhat, Indira Hirway, Devaki Jain, Darshini Mahadevia, Aasha Kapur Mehta, Mukul Mukherjee, Seeta Prabhu, Anuradha Rajivan and Renuka Vishwanathan.

power the poor and look at exclusion and inclusion in those institutions in order to use the right tools for engendering a change in gender relations.⁹ Alternate GDI and GEM were developed at the national level and for major States. The results for India were based on a range of different variables and the computed scores differed significantly from those prepared by UNDP.

In 1998, the then Department of Women and Child Development of the Ministry of Human Resource Development initiated consultations with State and Union Territory administrations through workshops on gender issues and indicators and developing GDI and GEM with a view to disseminating the concept and initiating exercises in gender-sensitive planning.

Subsequently the Group of Indian Women Economists developed alternative GDI and GEM for eight districts, taking two districts in each of four States of India – Gujarat, West Bengal, Karnataka and Tamil Nadu. The results showed that there was greater participation of women if institutions in which women participate are included, rather than just professional associations, official participation and Parliament.

UNDP conducted a review of the GDI and GEM in 2005-06. Problems identified for GDI in this and other reviews include¹⁰:

- i. Misinterpretation as a measure of gender inequality. The GDI is not a measure of *gender inequality*. Rather, it is a measure of human development that adjusts

the HDI to penalise for disparities between women and men in the three dimensions of the HDI; briefly, GDI is the HDI adjusted for gender disparities.¹¹

- ii. Problems with the way gender gaps in incomes are calculated and the implicit assumption that gender differences in earned incomes are a good representation of gender differences in access to nutrition, housing, and clothing.¹²
- iii. Data availability and reliability.¹³
- iv. High GDI values for high HDI countries may suggest that gender inequalities are too small to have a noticeable impact on their human development. But in reality there are some subtle gender inequalities (educational choices, quality of education, access to employment and training, promotion, pay, etc.), which the GDI is too crude to pick up, and which may have a substantial impact on human development of developed countries.¹⁴
- v. The GDI remains a problematic indicator of gender-sensitive human development. In particular, the implied penalty for gender inequality remains dominated by the earned income component.¹⁵
- vi. There continue to be conceptual and practical problems with the earned income component of GDI. Its interpretation is unclear and the database used to generate it is very thin, not very reliable and plagued by inconsistencies across countries.¹⁶

⁹ Devaki Jain (1996), "Valuing Work: Time as a Measure", *Economic and Political Weekly*, October 26; K. Seeta Prabhu, P.C. Sarker and A. Radha (1996), "Gender-Related Development Index for Indian States Methodological Issues", *Economic Political Weekly*, 31(43), 26 Oct, pp. WS - 72-WS-96; Hirway, Indira and Darshini Mahadevia (1996), "Critique of Gender Development Index: Towards an Alternative", *Economic and Political Weekly*, October 26; Aasha Kapur Mehta (1996) op. cit.

¹⁰ Klasen, Stephan (2006), "UNDP's Gender-related Measures: Some Conceptual Problems and Possible Solutions", *Journal of Human Development*, 7 (2), July, pp. 243-274.

¹¹ Klasen (2006) *ibid*.

¹² Klasen (2006) *ibid*.

¹³ Klasen (2006) *ibid*.

¹⁴ Kalpana Bardhan and Stephan Klasen (1999). "UNDP's Gender-Related Indices: A Critical Review", *World Development* 27(6), June, pp. 985-1010.

¹⁵ Bardhan and Klasen (1999) *ibid*.

¹⁶ Bardhan and Klasen (1999) *ibid*.

- vii. In most of the Third World countries, poverty accentuates the problems faced by women and gender relations are influenced by traditional hierarchies based on patriarchy, caste and ethnicity and compounded by inequalities of wealth and power. Women in the lower strata are not only exploited economically but are also more socially oppressed than the male working poor. Seeta Prabhu argues for construction of a comprehensive index that is sensitive to the special problems faced by women in developing countries.¹⁷
 - viii. GDI overemphasises income as a measure of welfare, has a narrow selection of variables, and omits structural dimensions such as poverty, inequality and patriarchy crucial for the development of women's capabilities in the countries of the South.¹⁸
 - ix. Additional limitations include the constraints of producing a globally comparable composite index across many countries – a more relevant index could be produced if its use was limited to one country or cluster of countries. Further, composite indices may hide more than they reveal depending on the choice of weights; method of aggregation; and mixing of output and input indicators.
- i) Instead of simply considering the gender gap of earned incomes (which would be a good measure of female economic empowerment), it includes a measure that takes absolute incomes of males and females penalised for gender disparities.
 - ii) Gender gaps are being calculated in a complicated way in the GEM. It would probably be more intuitive to use the ratio of female-to-male achievements in the components.
 - iii) Poor availability of data in many countries.

The UNDP Review¹⁹ suggested that:

- A separate HDI for men and for women could replace the GDI. Differences between the two indices might be easier to interpret than the GDI.
- Since gender disaggregated income figures are not widely available, estimating earned income for men and women is problematic when calculating both GDI and GEM. Using the wage ratio in the non-agricultural sector and the labour force participation rate by gender has shortcomings both due to lack of data and because income transfers within the household will lead to smaller intra-household differences in living standards than is reflected by the estimates of actual earnings.
- The GEM includes the absolute average level of income in a country, which means that only rich countries can achieve a high GEM score. Considering only the relative income shares of men and women rather than average income levels would remedy this problem.
- There are gender gaps in care work and these need to be addressed, as does violence.

The UNDP Review noted that GEM is conceptually clearer, more easily interpreted and more relevant at the country level especially as an advocacy tool to highlight poor access to positions of political and economic power. It can also include representation in local government institutions and empowerment indicators such as decision-making at the household level. It can be disaggregated to the sub-national level. However the Review noted that GEM had three primary shortcomings, among other minor issues.

¹⁷ Seeta Prabhu et al (1996) op.cit.

¹⁸ Hirway and Mahadevia (1996) op.cit.

¹⁹ Klasen (2006) op.cit.

The Need for Recasting GDI and GEM for India

In 2002, the Planning Commission prepared the first National Human Development Report for India (National Human Development Report 2001²⁰), in which it computed the Human Development Indices (HDI), Gender Equality Indices (GEI) and Human Poverty Indices (HPI) for India and States/UTs as well as for rural and urban areas for 1981 and 1991. The indicators used to estimate HDI and GEI are given in Table 1.2. The Planning Commission also presented development radars to give a snapshot view of the status of eight human development indicators in the early 1980s and early 1990s, as captured by per capita expenditure, infant mortality rate, life expectancy, formal education, literacy, pucca house, safe water and poverty.

Keeping in view the need for recasting GDI and GEM to suit the Indian situation and to develop comparable indices for States/UTs, the Ministry of Women and Child Development, Government of India, took up the activity of compiling GDI and GEM for India and for all the States/UTs in January 2007, under the MWCD-UNDP Project, "Promoting Gender Equality".

**Table 1.2: HDI and GEI –
Departures from UNDP Indices**

UNDP-Indicators	Attainments	NHDR-Indicators
Life Expectancy at Birth	Longevity	Life Expectancy at age 1 and Infant Mortality Rate
Adult Literacy Rate with Combined Gross Enrolment Ratio	Educational Attainment	Literacy Rate 7+ and intensity of Formal Education
Real GDP per capita in PPP\$	Economic Attainment	Per capita real consumption expenditure adjusted for inequality; and Worker population ratio in case of Gender Equality Index

Source: Planning Commission, (2002) *National Human Development Report 2001*, New Delhi, page 23.

The Outcome

This report compiles and presents GDI and GEM for India and the States/UTs for the years 1996 and 2006. An attempt has also been made to compile these indices for two districts, namely Mahbubnagar in Andhra Pradesh and Jodhpur in Rajasthan, for the same two time points. The report also highlights the prominent data gaps that constrain the computation of indices. The indices have been analysed and the conclusions are presented to draw the attention of stake-holders at all levels to gender-based disparities in different facets of development and empowerment so as to enable corrective policies, programmes and schemes.

²⁰ Planning Commission, National Human Development Report 2001, New Delhi, 2002.

**Ministry of Women and Child Development's
Initiative: The Process of Recasting the GDI and
GEM for India and the States/Union Territories**

2. Ministry of Women and Child Development's Initiative: The Process of Recasting the GDI and GEM for India and the States/Union Territories

GDI and GEM developed by UNDP are based on a northern perspective and do not incorporate the perspective of the South. How can we recast GDI and GEM to make them meaningful for India within the limitations of data availability? Can GDI and GEM become effective instruments for building gender equity?

With this as the objective, the Ministry of Women and Child Development (MWCD) decided to recast GDI and GEM for India and for the States/Union Territories (UTs). UNDP provided support for this initiative with technical and financial assistance through the MWCD-UNDP project, "Promoting Gender Equality". Indian Institute of Public Administration (IIPA), New Delhi was identified as the Technical Collaborating Institution for the task (**Annexure 1**). In January 2007, MWCD constituted a Technical Advisory Committee (TAC) with Smt. S. Jeyalakshmi, Statistical Adviser, MWCD, as the Chairperson and Prof. Aasha Kapur Mehta, Professor of Economics, IIPA, as the Member Secretary. The TAC members comprised representatives from the Ministry of Statistics and Programme Implementation, Registrar General of India, Planning Commission, Social Sector Ministries, academic institutions such as Indian Statistical Institute and International Institute of Population Sciences, a few of the women economists who had worked on these indicators in 1996 and representatives of UNDP (**Annexures 2 and 3**).

The terms of reference of TAC were as follows:

- a) Develop the methodology for computation of GDI/GEM by deciding
 - The list of socio-economic and developmental indicators for constituting the basket for computation of GDI and GEM separately.
 - The Base Year i.e. the year from which the index is to be calculated.
 - The weighting diagram for combining the indicators for computation of index.
 - The formula for calculation of the index.
- b) Examination and approval of the GDI/GEM prior to its release.

An iterative process was followed through three brainstorming TAC Workshops.

i) **The First Technical Advisory Committee Workshop** was held on 16th March, 2007 at IIPA. The following decisions were taken:

- Five categories of indices would be attempted at the national level
 - a. Gender Development Index and Gender Empowerment Measure
 - b. Development Index for males and females separately.
 - c. Empowerment Measure for males and females separately.

d. Monitoring or Tracking Indicators to identify certain processes like infrastructure development, housing, etc.

e. Inequality indicators estimated by Gender Gap Index = $\frac{\text{Male Value} - \text{Female Value}}{\text{Male Value}}$

with a value of 0 indicating no disparity, and a value of 1 indicating maximum disparity.

- There will be a short-term goal (Phase 1 and 2) and a long-term goal (beyond Phase 2). The current project is confined to dealing with the short-term goal of calculating GDI/GEM at National level and for the major Indian States. While this exercise will be confined to the National and State level based on available indicators, an attempt will be made (in Phase 2) to extend it to one or two districts in order to be able to recommend the absolute minimum list of indicators on which data must be collected and available at the district level. In the long term, compiling GDI/GEM for all districts of India can be considered.
- The project may recommend the desirable indicators for calculating GDI/GEM at National, State and District levels and identify data gaps.
- Only those indicators should be included for which data is available separately for males and females so that gender differentials are captured (Male/Female differences). The indicators used by Planning Commissions (for GEI) will also be considered while finalising the basket of indicators for compiling GDI and GEM.
- The dimensions used can be the same as used by UNDP but the indicators to measure these dimensions can be different. Also, the weightage given to the indicators and the goal posts

can differ from those used by UNDP so as to reflect Indian conditions.

- When the report is prepared, a section can be included to identify the critical gaps in data in respect of GDI and GEM.

A tentative list of over 100 indicators was prepared as part of the Concept Note and placed before the Technical Advisory Committee to facilitate identification of the indicators that could be considered in compilation of GDI, GEM and Tracking Indicators. After discussion, this was reduced to a list of 50 indicators for which the data availability was to be determined prior to deciding which of them would be used for computing the indices. The details are annexed at **Appendix 4.2.**

ii) The Second Technical Advisory Committee Workshop was held on 24th June, 2008 at IIPA. The following decisions were taken:

- Only two indices would be calculated: (i) GDI and (ii) GEM.
- GDI and GEM would be calculated at the National or All-India level, for States and for two districts.
- The estimates would be prepared at two time points: 1991 and 2001.
- The same three Dimensions used in UNDP's GDI and GEM would be maintained with one marginal change: Dimension 2 of GEM would be Economic and Social Participation and Decision-making instead of just Economic Participation and Decision-making.
- The same dimension ordering or listing would be used as for UNDP's GDI and GEM.
- The basket of indicators used to compile the index for each dimension would be changed as needed and enlarged.

- The title for the Report would be, "Gendering Human Development Indices: Recasting the GDI and GEM for India", as suggested by Prof. Devaki Jain.
- Data sources would be examined by the IIPA Technical team and where required, TAC members would be requested to facilitate procurement of data and provide suggestions.

Dimensions and Indicators of GDI and GEM as decided by the TAC members are given below but the final list would depend on data availability/suggestions.

Dimensions and Indicators for GDI

Dimension 1: A Long and Healthy Life

Indicators

- IMR (Girls/Boys)
- Life Expectancy at age 1 (Girls/Boys)
- % Children underweight (Girls/Boys)

Dimension 2: Knowledge

Indicators

- 7+ Literacy rate
- Primary, Secondary and Tertiary Combined Gross Enrolment Ratio
- Use of ICT (Internet + Radio + TV + Mass Communication)

Dimension 3: A Decent Standard of Living

Indicators

- Share of Agricultural Income
- Share of Income in the Non-Agricultural Informal Sector

Dimensions and Indicators for GEM

Dimension I: Political Participation and Decision-making Power

Indicators

- % Share of Parliamentary Seats
- % Seats of Legislature, *Zilla Parishads, Panchayat Samiti, Gram Panchayats*, Urban Local Bodies
- % Representation in Parliamentary Committees
- % Candidates in Electoral Process
- % Central and State Council of Ministers
- % Participation in Governance Structures of Political Parties
- % Electors exercising the right to vote
- % Membership of Trade Unions

Dimension 2: Economic and Social Participation and Decision-making Power

Indicators

- % Share in All India Civil Services
- % Participation in National Commissions
- % Participation in State Planning Boards and District Planning Committees
- % Senior Managers in the Corporate Sector
- % Participation in Banks, Co-operative Banks and Financial Institutions
- % Share of Professionals (Judges, Lawyers, Doctors, Engineers, Journalists)
- % Participation in Decision-making Bodies of Journalists, Lawyers, etc.

Dimension 3: Power over Economic Resources

Indicators

- i) Female/Male Ownership of Assets such as land, dwelling, livestock, and productive assets
- ii) Female/Male who Availed of Credit
- iii) Female/Male Estimated Earned Income

The TAC Chairperson and Member Secretary were requested to:

- Assign weights to the indicators used for each dimension.
- Suggest the goal posts to be used.
- Discuss the framework, suggested dimensions, choice of indicators, indicators identified, weights and goal posts with four experts and request them for their expert comments and suggestions. The experts were Dr. Pronab Sen, Secretary and Chief Statistician, Ministry of Statistics and Programme Implementation (M/o S&PI); Prof. Amitabh Kundu, Jawaharlal Nehru University and Member National Statistical Commission; Dr. S.K. Nath, Director General, Central Statistical Organisation, M/o S&PI and Dr. J. Dash, Additional Director General, Social Statistics Division (M/o S&PI).

Subsequently, the indices would be compiled and a draft report prepared and presented to TAC and at a Multi-Stakeholder Workshop.

iii) The Third Technical Advisory Committee Workshop was held on 28th November, 2008 at IIPA.

The important decisions taken at the workshop were:

- The number of indicators for measuring each dimension should be small.
- Overlapping should be avoided as far as possible.

- There will be a strong relationship between some of the finalised indicators. While indicators may be used despite this, justification for use will be needed. The report should clearly state the reasons for selection of the final list of indicators. Correlation matrices can be used to curtail the number of indicators where the number is large.
- Data on indicators that have been dropped in the Third TAC workshop should be included in the explanations segment of the report.
- The income indicator estimated for GDI would also be used in estimating GEM.
- Equal weights would be assigned to all the indicators.
- The value to be used for epsilon (ϵ) would be 2.
- It would be desirable to estimate income earned share based on NSS Rural and Urban Wage Rate for agricultural and non-agricultural sector (combined) and (ii) Rural and Urban (Principal + Subsidiary workers) in agricultural and non-agricultural sector (combined).
- Indicators such as percentage of children under-weight; use of ICT; % Central and State Council of Ministers; % representation in Lok Sabha and Rajya Sabha Committees, etc. would not be used in estimating the index but would be used in the explanations section of the report.
- Data gaps identified would be highlighted.
- Estimates of GDI and GEM would be compiled for two time periods, 2006 and 1996.

The detailed reports of the three TAC Workshops are at **Annexures 4, 5 and 6**. The final choice of dimensions and indicators was based on the need to use variables that are intuitively understandable and relevant, within the constraints imposed by availability of reliable data. The final list of Indicators within

Table 2.1: Gendering Human Development Indices: Recasting GDI for India - Dimensions and Indicators

Dimension 1: A Long and Healthy Life	
S. No.	Indicators
i)	Infant Mortality Rate
ii)	Life Expectancy at age 1
Dimension 2: Knowledge	
S. No.	Indicators
i)	7+ Literacy Rate
ii)	Mean Years of Education or Combined Gross Enrolment Ratio (I-VIII)
Dimension 3: A Decent Standard of Living	
S. No.	Indicators
i)	Female/Male Estimated Earned Income Share

the dimension of GDI and GEM decided by the TAC members are in Tables 2.1 and 2.2.

Given below is a summary of the decisions taken in the three TAC workshops that enabled determination of these indicators:

- Only two indices would be calculated: (i) GDI and (ii) GEM. These would be calculated at the national or All-India level and for States/UTs. Calculation of GDI and GEM would be attempted for two districts to identify data gaps. The indices would be calculated for two time periods, 1996 and 2006.
- The index compiled should be simple, easily calculable and easy to interpret.
- For maintaining international comparability, the dimensions used would be the same as those used by UNDP.
- Equal weights would be assigned to all the dimensions. However, within dimensions, the indicators chosen, weights and goal posts would be more relevant to the Indian context.
- Critical gaps in data availability could be highlighted.

Table 2.2: Gendering Human Development Indices: Recasting GEM for India - Dimensions and Indicators

Dimension 1: Political Participation & Decision-making Power	
S. No.	Indicators
i)	% Share of Parliamentary Seats
ii)	% Share of Seats in Legislature
iii)	% Share of Seats in <i>Zilla Parishads</i>
iv)	% Share of Seats in <i>Gram Panchayats</i>
v)	% Candidates in Electoral Process in National Parties
vi)	% Electors exercising the right to vote
Dimension 2: Economic Participation & Decision-making Power	
S. No.	Indicators
i)	% Share in Service in IAS, IPS and Indian Forest Service
ii)	% Share of enrolment in medical and engineering colleges
iii)	Work Force Participation Rate (WFPR) in non-agricultural sector (if data available)
Dimension 3: Power over Economic Resources	
S. No.	Indicators
i)	% of Operational Land Holdings and Area Operated
ii)	% Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)
iii)	Female/Male Estimated Earned Income Share as estimated for GDI

Given the constraints of data availability and based on the dimensions and indicators finalised at the third TAC workshop, the Project Team at the Indian Institute of Public Administration estimated HDI, GDI and GEM for India and the States/UTs for 1996 and 2006. The results were presented at a meeting chaired by Shri Anil Kumar, Secretary, MWCD and attended by senior officials of MWCD on 13th January, 2009. Subsequently, it was discussed at an MWCD-UNDP-IIPA Multi-Stakeholder Workshop held at IIPA on 20th February, 2009. Shri Anil Kumar,

Secretary, MWCD, inaugurated the workshop in the presence of Dr. Pronab Sen, Chief Statistician of India and Secretary (M/o S&PI), Shri B.S. Baswan, Director IIPA, Smt. Vijayalakshmy K. Gupta, Additional Secretary, MWCD and Ms. Sumeeta Banerji, Assistant Resident Representative, UNDP. Prof. Amitabh Kundu, Jawaharlal Nehru University and Member, National Statistical Commission chaired and led the discussion session along with a panel of experts comprising Dr. A.K. Shiva Kumar, UNICEF, Dr. Santosh

Mehrotra, Planning Commission and Dr. Preet Rustagi, Institute of Human Development. The report was revised based on the valuable comments received from the panel and the large number of experts who attended the workshop and from the UNDP Human Development Report Office, New York. The detailed methodology is given in Chapter 3; the indices are presented in Chapters 4 and 5; Chapter 6 mentions the prominent data gaps and need for corrective action and Chapter 7 suggests the way forward.

Dimensions, Indicators, Goal Posts and Weights for HDI, GDI and GEM

3. Dimensions, Indicators, Goal Posts and Weights for HDI, GDI and GEM

The final list of indicators used was constrained by availability of data for India and for most States and Union Territories. Data gaps exist even for the indicators that were finally selected, thereby requiring adjustments. All the three indices, HDI, GDI and GEM were calculated for 1996 and 2006. The Dimensions and Indicators used for computing HDI, GDI and GEM are given below.

HDI and GDI: Dimensions and Indicators

HDI and GDI Dimension 1: 'A Long and Healthy Life'

Indicators

- i) Infant Mortality Rate
- ii) Life Expectancy at age 1.

The negative index for infant mortality rate was converted to a positive index by subtracting the value of the index from 1.

HDI and GDI Dimension 2: 'Knowledge'

Indicators

- i) 7 + Literacy Rate
- ii) Mean Years of Education (15+ age group).

HDI and GDI Dimension 3: 'A Decent Standard of Living'

Indicator

- i) Estimated Earned Income per capita per annum.

GEM

GEM Dimension 1: 'Political Participation & Decision-making Power'

Indicators

- i) % Share of Parliamentary Seats (elected)
- ii) % Share of Seats in Legislature (elected)
- iii) % Share of Seats in *Zilla Parishads* (elected)
- iv) % Share of Seats in *Gram Panchayats* (elected)
- v) % Candidates in Electoral Process in National Parties in the Parliamentary election
- vi) % Electors Exercising the Right to Vote in the Parliamentary election.

GEM Dimension 2: 'Economic Participation and Decision-making Power'

Indicators

- i) % Share of officials in service in Indian Administrative Service, Indian Police Service and Indian Forest Service
- ii) % Share of enrolment in medical and engineering colleges.

GEM Dimension 3: 'Power Over Economic Resources'

Indicators

- i) % Female/Male with Operational Land Holdings

ii) % Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)

iii) Female/Male Estimated Earned Income Share.

Rationale for Choice of Indicators Used for Computing HDI and GDI

Dimension 1: 'A Long and Healthy Life'

The UNDP HDR uses Life Expectancy at Birth (LEB) to measure the Dimension "long and healthy life" while the NHDR 2001 uses Life Expectancy at age 1 and Infant Mortality Rate (IMR). However, LEB only takes length of life into account and not the quality of life in terms of morbidity or mortality. A strong argument can be made for supplementing LEB with IMR as "male and female LEBs do not adequately highlight the real divergence in health conditions between the sexes that is starkly captured by proxies like the sex ratio and gender differentiated IMRs ..." ²¹. As IMR is a strong indicator of morbidity and mortality and pertains to infants in the age group 0 to 1, it was decided to use Life Expectancy at age 1 together with IMR instead of LEB. The negative IMR index is converted to a positive index by subtracting the value from 1.

As expected, these two indicators are negatively correlated. Equal weights were given to both indicators.

Dimension 2: 'Knowledge'

The UNDP HDR uses Adult Literacy Rate and the Combined Primary, Secondary and Tertiary Gross Enrolment Ratio to capture 'Knowledge', while NHDR 2001 uses 7+ Literacy Rate.

Two indicators have been used to capture this dimension in this report:

i) 7+ Literacy Rate

ii) Mean Years of Education for 15+ age group.

As expected, the two indicators for this dimension are positively correlated. Two thirds weight has been given to 7+ Literacy Rate and one third to Mean Years of Education on the same lines as adopted by UNDP for literacy and combined Gross Enrolment Ratio.

Since 'Knowledge' extends well beyond literacy and schooling, efforts were made to include the indicator "use of ICT based on use of the Internet, radio, TV, newspapers, phones etc." However gaps exist in availability of sex disaggregated data and its quality. Hence this indicator was dropped from the analysis.

Dimension 3: 'A Decent Standard of Living'

The UNDP HDR uses "estimated earned income" by males and females in Purchasing Power Parity (PPP) US\$ to measure Dimension 3, 'A decent standard of living', while NHDR 2001 uses "per capita real consumption expenditure" adjusted for inequality. In this report, the Income Index is computed through estimation of Female/Male Earned Income Share. The estimation is based on Net State Domestic Product (NSDP) at constant prices and female and male wage rates for casual labourers applied to all female and male workers based on usual status (principal plus subsidiary status). It may be noted that National Data Systems are unable to realistically estimate the significant work done by women even within the "economic" sphere, as much of this is unpaid and is subsumed within "family" enterprises in the informal sector. ²² For this and

²¹ Vishwanathan, Renuka (2000), Measuring Development, Human Rights and Domestic Violence, International Association for Official Statistics Conference at Montreux.

²² Devaki Jain and Malini Chand, (1982). Report on a Time Allocation Study: Its Methodological Implications, Indian Social Studies Trust, April; Devaki Jain (1996), "Valuing Work: Time as a Measure", *Economic and Political Weekly*, October 26, Maithreyi Krishnaraj and Amita Shah, Women in Agriculture, Academic Foundation, 2004; Aasha Kapur Mehta (2000), The Invisible Workers: Women's Unrecognised Contribution to the Economy, Manushi, November-December., MOSPI, (July 1998 – June 1999) Time Use Survey

a large number of other reasons, they remain statistically invisible. This is apart from the massive cooking, cleaning and caring burden borne by women.

NSS Work Force Participation Rates (while also underestimating women's work) have been consistently significantly higher than Census estimates in capturing the work force participation rate of women, with the exception of the 2001 Census. Hence Work Force Participation Rates and wage rates of casual labour ²³ required for computing female and male earned income share were estimated on the basis of data from the NSS 50th quinquennial Round (1993-94) for 1996 and the 61st quinquennial Round (2004-05) for 2006.

Gender Empowerment Measure

What is empowerment? It is about "liberation of both men and women from oppression, where each can become a whole being regardless of gender, and use their fullest potential to construct a more humane society for all".²⁴ Further, "people must participate fully in the decisions and processes that shape their lives."²⁵ Additionally, "empowerment of ...individuals has certain requisites that include resources (finance, knowledge, technology), skills training and leadership formation, democratic processes, dialogue, participation in policy and decision making and techniques for conflict resolution."²⁶ Charmes and Wieringa²⁷ consider awareness, choice, resources, voice, agency and participation as elements of empowerment.

Dimension I: 'Political Participation & Decision-making Power'

The UNDP HDR uses 'Political participation and decision-making power', as measured by women's and men's percentage shares of parliamentary seats. However, the political arena and decision-making extend well beyond Parliament and decisions are taken at many levels of governance. In India, political equality to both men and women is guaranteed by the Constitution through the institution of adult franchise. Affirmative action through the 73rd and 74th Constitutional Amendments has had a tremendous impact on reducing inequalities in political representation in local governance. However, the representation of women at the highest level of decision-making has remained low ²⁸.

Since women's participation in decision-making at all levels of governance is important as is their participation in deciding who will govern and take decisions on their behalf, we use the following indicators to estimate 'Political Participation & Decision-making Power'.

Indicators

- i) % Share of Parliamentary Seats (elected)
- ii) % Share of Seats in Legislature (elected)
- iii) % Share of Seats in *Zilla Parishads* (elected)
- iv) % Share of Seats in *Gram Panchayats* (elected)
- v) % Candidates in Electoral Process in National Parties in the Parliamentary election.
- vi) % Electors exercising the right to vote in the Parliamentary election.

²³ Data on average wage rates is not readily available and has been generated especially by NCEUS for this report.

²⁴ Srilatha Batliwala (1994): 131 and Oxaal, Zoë, and Sally Baden (1997), "Gender and empowerment: definitions, approaches and implications for policy", *Bridge Development-Gender*, Report No.40, October.

²⁵ UN 1995b: 12 cited in Oxaal and Baden 1997 *ibid*.

²⁶ Sen and Grown cited in Oxaal 1997 *ibid*.

²⁷ Charmes, Jacques and Saskia Wieringa, (2003), "Measuring Women Empowerment: an assessment of the Gender-Related Development Index and the Gender Empowerment Measure", *Journal of Human Development*, 4 (3), November, pp 419-435.

²⁸ Aasha Kapur Mehta (1996), *op. cit*.

Dimension 2: 'Economic Participation and Decision-making Power'

UNDP uses an average of female and male shares of positions as legislators, senior officials and managers and female and male shares of professional and technical positions to capture this indicator. Female and male shares of positions as legislators have already been included in Dimension 1 and so have been excluded from Dimension 2. Due to data constraints we are limited to using the indicators given below:

Indicators

- i) % Share of officials in service in Indian Administrative Service, Indian Police Service and Indian Forest Service
- ii) % Share of enrolment in medical and engineering colleges

Preferred indicators for inclusion would be membership of collectives (since groups both provide collective strength and are empowering) and membership of State Planning Boards. However, data on membership of, for instance, trade unions is not available at the State level and below. Information regarding men and women in State Planning Boards (SPBs) is not available. Searching each site gives a few names but since representation is also by position, information regarding name/gender is not available. While the Ministry of Human Resource Development publishes gender disaggregated data on enrolment in medical and engineering colleges, data for management colleges and for professional associations was not readily available.

Dimension 3: 'Power over Economic Resources'

The UNDP HDR uses estimated income earned by males and females in PPP US\$ to measure the Dimension, 'Power over Economic Resources'.

Women's access to independent sources of income is positively related to their participation in household decision-making and the treatment they receive from family members. In most households, the male head of the family determines the use of incomes earned by the women. Indices based on share of income continue to be used for lack of an alternative, but income earned does not necessarily reflect access to resources.

Two critical resources are access to assets and to credit. Women have little access to land, dwelling, livestock, and productive assets. Gender-based data gaps are yet to be rectified for ownership of assets. This is an important source of empowerment and the estimates are likely to reflect significant disparities between men and women. Similarly, access to credit is an important index of empowerment in the context of persistent poverty and indebtedness, exacerbated by the burden of paying exorbitant rates of interest on the meagre sums borrowed from local moneylenders. Women traditionally have difficulty in accessing credit due to lack of ownership of land and assets that can be used as collateral. Availability of adequate and timely credit at institutional rates of interest makes a significant difference to the quality of life of the women and their families.²⁹ Gender disaggregated data is now available for bank accounts with credit limit above Rs. 2 lakh in scheduled commercial banks. However this is still not available for accounts with credit limit below Rs. 2 lakh. This places most of the population outside the purview of gender disaggregated data on access to credit.

In view of limitations in data availability, we use the following three indicators:

Indicators

- i) % Female/Male with Operational Land Holdings
- ii) % Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)

²⁹ Mehta (1996) op.cit.

iii) Female/Male Estimated Earned Income Share per capita per annum

Female/Male Earned Income Share was estimated on the basis of NSDP at constant prices and female and male wage rates for casual labourers applied to all female and male workers (per thousand) based on usual status (principal plus subsidiary status). Data for the 50th quinquennial Round (1993-94) was used for estimating indices for 1996 and the 61st quinquennial Round (2004-05) for 2006.

Method of Construction of Indices: HDI, GDI and GEM

Calculation of both GDI and GEM closely follows the UNDP HDR method with marginal deviations in goal posts and weights.

The maximum and minimum values or goal posts are selected for each indicator used for estimating HDI and GDI. Table 3.1 lists the maximum and minimum goal posts that were applied to make each selected indicator scale free for estimating HDI and GDI.

The rationale for deciding the goal posts is as follows:

- The same goal posts need to be used for both the time points selected, i.e., 1996 and 2006, and also for the States and districts of India.
- Since the estimate of IMR was highest at 100 for males in Orissa in 1996, HDI and GDI were estimated using an IMR of 105 as the maximum. An infant mortality rate of 0 is desirable and this was applied as the minimum goal post.
- The goal posts used for Life Expectancy at age 1 were the same as those used by UNDP for Life Expectancy at Birth.
- The maximum goal post of 100 and minimum of 0 was applied to the 7+ Literacy Rate and is in conformity with the UNDP goal posts for literacy.

Table 3.1: Goal Posts for HDI and GDI

	Maximum	Minimum
'A Long and Healthy Life'		
Infant Mortality Rate	105 per 1000 live births	0 per 1000 live births
Life Expectancy at age 1 for HDI	85 years	25 years
Life Expectancy at age 1 for GDI	87.5 years for females and 82.5 for males	27.5 years for females and 22.5 for males
'Knowledge'		
7+ Literacy Rate	100 percent	0 percent
Mean Years of Education for 15+ age group	25 years	1 year
'A Decent Standard of Living'		
Female/Male Estimated Earned Income Share per capita per annum	Rs. 1,50,000	Rs. 100

- For Mean Years of Education, the minimum was taken to be 1 year since 1.2 years was the minimum estimated for females in Bihar in 1996. The maximum years of education was taken to be 25.
- The maximum estimate of income was around Rs. 1,47,000 per capita per annum for males in Chandigarh in 2006. This was rounded off to Rs. 1,50,000. The minimum was assumed to be Rs. 100.

The weights used for combining the three dimensions as well as the indicators within each dimension are presented in Table 3.2 for HDI and GDI and Table 3.3 for GEM.

The indicators identified for measuring each of the three dimensions, viz., 'A Long and Healthy Life', 'Knowledge' and 'A Decent Standard of Living', are made scale free and expressed as a value between 0

Table 3.2: Weights for Dimensions and Indicators - HDI and GDI

Dimensions/Indicators	Weights
Dimension 1: 'A Long and Healthy Life'	One - third
Infant Mortality Rate	Half for each indicator within the dimension
Life Expectancy at age 1	
Dimension 2: 'Knowledge'	One - third
7+ Literacy rate	Two thirds within the dimension
Mean Years of Education (15+ age group)	One third within the dimension
Dimension 3: 'A Decent Standard of Living'	One - third
Female/Male Estimated Earned Income Share	

and 1 by applying the following standard formula:

Index Scale Free Value

$$= \frac{\text{Actual value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

The scale free values of indices of a dimension are combined using the weights and the scale free dimension indices are calculated. The HDI is then calculated as the simple average of three scale free dimension indices.

GDI is estimated on the basis of the same three dimensions as the HDI but adjusts the average achievement in respect of these three dimensions to reflect the inequalities between men and women by applying a moderate penalty. The scale free index values are calculated separately for females and males for all the indicators, IMR, LE at age 1, Literacy 7+, Mean Years of Education (15+ age group) and log of Estimated Female/Male Earned Income.

After estimating the scale free index for females and males, the Equally Distributed Dimension Index is computed for each of the dimensions of GDI. As

Table 3.3: Weights for Dimensions and Indicator - GEM

Dimensions/Indicators	Weights
Dimension 1: 'Political Participation & Decision-making Power'	One - third
% Share of Parliamentary Seats (elected)	One sixth for each indicator within the dimension
% Share of Seats in Legislature (elected)	
% Share of Seats in <i>Zilla Parishads</i> (elected)	
% Share of Seats in <i>Gram Panchayats</i> (elected)	
% Candidates in Electoral Process in National Parties in the Parliamentary election.	
% Electors exercising the right to vote in the Parliamentary election.	
Dimension 2: 'Economic Participation and Decision-making Power'	One - third
% Share of officials in service in IAS, IPS and Indian Forest Service	Half for each indicator within the dimension
% Share of Enrolment in Medical and Engineering Colleges	
Dimension 3: 'Power over Economic Resources'	One - third
% Share of Operational Land Holdings	One third for each indicator within the dimension
% Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)	
Female/Male Estimated Earned Income Share per capita per annum	

the value of ε is taken as 2, the Equally Distributed Dimension Index becomes the weighted harmonic mean of the scale free index for females and males, the weights being the population share. The GDI is calculated as the simple average of the three Equally Distributed Dimension Indices.

If there is more than one scale free index within a dimension, these are combined using weights and the scale free dimension index for females and males is obtained. Subsequently, using the scale free dimen-

sion index for females and males, the Equally Distributed Dimension Index is calculated and then GDI.

In the case of GEM, from the percentage share, the Equally Distributed Equivalent Percentage (EDEP) is calculated by applying the penalty value of ε as 2 to the percent female and male shares in the identified area, with weights being the female and male population share. This is actually the weighted harmonic mean of percentage shares with population shares as the weights.

The EDEP of a dimension is then indexed to an ideal value of 50, i.e., the EDEP is divided by 50. If there were perfect equality between women and men, the indexed EDEP would equal 1. All indexed EDEPs within a dimension are averaged using weights to get the indexed EDEP for that dimension. GEM is then calculated as the simple average of the three dimension indexed EDEPs. The detailed method of computation is given in **Annexure 7**.

The calculated indices of HDI, GDI and GEM for India and the States/UTs are presented in Chapters 4 and 5.

HDI and GDI Estimates for India and the States/UTs: Results and Analysis

4. HDI and GDI Estimates for India and the States/UTs: Results and Analysis

HDI is a simple average of three dimension indices, each of which measures average achievements in a country with regard to 'A long and healthy life', 'Knowledge' and 'A decent standard of living'. GDI adjusts the average achievements in the same three dimensions that are captured in the HDI to account for the inequalities between men and women.

The indicators used to estimate each of these dimensions are listed below.

Indicators for the Dimension 'A Long and Healthy Life'

- i) Infant Mortality Rate and
- ii) Life Expectancy at age 1.

The negative index for infant mortality rate was converted to a positive indicator by subtracting the value of the index from 1.

Indicators for the Dimension 'Knowledge'

- i) 7 + Literacy Rate and
- ii) Mean Years of Education for 15+ age group.

Indicators for the Dimension: 'A Decent Standard of Living'

- i) Estimated Earned Income per capita per annum.

Data was collected on each of the above indicators to estimate HDI and GDI for India and 35 States/UTs for 1996 and 2006.³⁰

The aggregate HDI and GDI scores estimated for India were 0.530 and 0.514 respectively in 1996 and 0.605 and 0.590 in 2006 (Table 4.1). Over the decade, the level of human development increased by 0.075 and gender development by 0.076 points. GDI scores were below HDI scores in both years, due to the existence of gender disparities.

Table 4.1: Estimated HDI and GDI for India - 2006 and 1996

Year	Human Development Index	Gender Development Index
2006	0.605	0.590
1996	0.530	0.514

HDI and GDI scores estimated for India and the scores for each of the three dimensions for the two points of time viz., 1996 and 2006, are presented in Tables 4.2 and 4.3.

Table 4.2: Dimension Scores for HDI for India - 2006 and 1996

Year	Health Index	Education Index	Income Index	Human Development Index
2006	0.577	0.506	0.730	0.605
1996	0.490	0.429	0.671	0.530

³⁰ Data sources for each of the time points and adjustments/assumptions made where gaps existed are discussed in Chapter 6.

Table 4.3: Dimension Scores for GDI for India: 2006 and 1996

Year	Health Index	Education Index	Income Index	Gender Development Index
2006	0.573	0.494	0.702	0.590
1996	0.490	0.409	0.643	0.514

Each of the three dimension indices that constitute HDI and GDI also reflect an increase over the

decade, thereby implying that progress has been made in each of these areas (Tables 4.2 and 4.3).

HDI Scores and Ranks for States/UTs

Scores achieved by India and the States/UTs on HDI and on each of its three dimensions are presented in Table 4.4. Table 4.5 gives the HDI scores and ranks for India and the States/UTs, with the highest ranking State/UT getting rank 1.

Table 4.4: Dimension-wise HDI Scores for States/UTs - 2006 and 1996

S.No.	States/Union Territories	HDI 2006				HDI 1996			
		HI 06	Edi 06	YI 06	HDI 06	HI 96	Edi 96	YI 96	HDI 96
1	Andhra Pradesh	0.588	0.434	0.733	0.585	0.525	0.363	0.668	0.519
2	Arunachal Pradesh	0.624	0.606	0.712	0.647	0.613	0.358	0.675	0.549
3	Assam	0.495	0.607	0.682	0.595	0.444	0.529	0.656	0.543
4	Bihar	0.542	0.403	0.575	0.507	0.480	0.317	0.494	0.430
5	Goa	0.792	0.654	0.845	0.764	0.735	0.629	0.764	0.709
6	Gujarat	0.599	0.545	0.757	0.634	0.544	0.481	0.697	0.574
7	Haryana	0.604	0.533	0.792	0.643	0.531	0.455	0.724	0.570
8	Himachal Pradesh	0.634	0.598	0.771	0.667	0.566	0.516	0.689	0.590
9	Jammu & Kashmir	0.601	0.483	0.686	0.590	0.531	0.434	0.661	0.542
10	Karnataka	0.632	0.504	0.730	0.622	0.594	0.417	0.662	0.558
11	Kerala	0.836	0.697	0.758	0.764	0.835	0.679	0.695	0.736
12	Madhya Pradesh	0.461	0.470	0.656	0.529	0.340	0.371	0.589	0.433
13	Maharashtra	0.699	0.596	0.773	0.689	0.631	0.531	0.725	0.629
14	Manipur	0.762	0.635	0.707	0.702	0.684	0.518	0.627	0.610
15	Meghalaya	0.562	0.612	0.713	0.629	0.570	0.566	0.648	0.595
16	Mizoram	0.695	0.642	0.728	0.688	0.565	0.634	0.656	0.618
17	Nagaland	0.719	0.647	0.734	0.700	0.640	0.628	0.692	0.653
18	Orissa	0.474	0.463	0.674	0.537	0.356	0.403	0.623	0.461
19	Punjab	0.665	0.561	0.777	0.668	0.636	0.486	0.739	0.621
20	Rajasthan	0.527	0.415	0.681	0.541	0.425	0.342	0.647	0.472
21	Sikkim	0.657	0.610	0.728	0.665	0.545	0.542	0.660	0.582
22	Tamil Nadu	0.682	0.566	0.750	0.666	0.590	0.482	0.695	0.589
23	Tripura	0.643	0.611	0.733	0.663	0.566	0.551	0.621	0.579
24	Uttar Pradesh	0.490	0.459	0.636	0.528	0.405	0.363	0.606	0.458
25	West Bengal	0.668	0.533	0.726	0.642	0.578	0.478	0.662	0.573
26	Chhattisgarh	0.523	0.429	0.696	0.549	0.393	0.371	0.589	0.451
27	Jharkhand	0.594	0.447	0.683	0.574	0.491	0.317	0.494	0.434
28	Uttarakhand	0.624	0.607	0.726	0.652	0.492	0.363	0.606	0.487

Contd...

S.No.	States/Union Territories	HDI 2006				HDI 1996			
		HI 06	EdI 06	YI 06	HDI 06	HI 96	EdI 96	YI 96	HDI 96
29	Andaman & Nicobar Islands	0.701	0.644	0.780	0.708	0.692	0.605	0.736	0.678
30	Chandigarh	0.765	0.684	0.901	0.784	0.739	0.632	0.797	0.723
31	Dadra & Nagar Haveli	0.682	0.619	0.730	0.677	0.560	0.488	0.671	0.573
32	Daman & Diu	0.715	0.655	0.730	0.700	0.544	0.493	0.671	0.569
33	Delhi	0.675	0.707	0.837	0.740	0.639	0.642	0.779	0.687
34	Lakshadweep	0.729	0.630	0.730	0.697	0.755	0.632	0.671	0.686
35	Puducherry	0.725	0.642	0.809	0.725	0.773	0.575	0.679	0.676
	All India	0.577	0.506	0.730	0.605	0.490	0.429	0.671	0.530

Note: **HI** is the Index of 'A long and healthy life' based on Infant Mortality Rate and Life Expectancy at age 1; **EdI** is the Index of 'Knowledge' based on 7+ Literacy Rate and Mean Years of Education for 15+ age group; **YI** is the Index of 'A decent standard of living' based on Earned Income and **HDI** is the 'Human Development Index'.

Table 4.5: HDI Scores, Score Differences, Ranks and Rank Differences for States/UTs - 2006 and 1996

S.No.	States/UTs	HDI Score 2006	HDI Score 1996	HDI Score 2006 - HDI Score 1996	Rank based on Score difference in Col. 5	Rank HDI 2006	Rank HDI 1996	Rank HDI 1996 - Rank HDI 2006
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9
1	Andhra Pradesh	0.585	0.519	0.066	20	28	27	-1
2	Arunachal Pradesh	0.647	0.549	0.098	6	20	24	4
3	Assam	0.595	0.543	0.052	27	26	25	-1
4	Bihar	0.507	0.430	0.077	13	35	35	0
5	Goa	0.764	0.709	0.055	25	2	3	1
6	Gujarat	0.634	0.574	0.060	23	23	18	-5
7	Haryana	0.643	0.570	0.073	15	21	21	0
8	Himachal Pradesh	0.667	0.590	0.077	11	15	14	-1
9	Jammu & Kashmir	0.590	0.542	0.048	29	27	26	-1
10	Karnataka	0.622	0.558	0.064	21	25	23	-2
11	Kerala	0.764	0.736	0.028	34	2	1	-1
12	Madhya Pradesh	0.529	0.433	0.096	7	33	34	1
13	Maharashtra	0.689	0.629	0.060	24	11	9	-2
14	Manipur	0.702	0.610	0.092	8	7	12	5
15	Meghalaya	0.629	0.595	0.034	32	24	13	-11
16	Mizoram	0.688	0.618	0.070	17	12	11	-1
17	Nagaland	0.700	0.653	0.047	31	8	8	0
18	Orissa	0.537	0.461	0.076	14	32	30	-2
19	Punjab	0.668	0.621	0.047	30	14	10	-4
20	Rajasthan	0.541	0.472	0.069	18	31	29	-2
21	Sikkim	0.665	0.582	0.083	10	17	16	-1

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S.No.	States/UTs	HDI Score 2006	HDI Score 1996	HDI Score 2006 - HDI Score 1996	Rank based on Score difference in Col. 5	Rank HDI 2006	Rank HDI 1996	Rank HDI 1996 - Rank HDI 2006
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9
22	Tamil Nadu	0.666	0.589	0.077	12	16	15	-1
23	Tripura	0.663	0.579	0.084	9	18	17	-1
24	Uttar Pradesh	0.528	0.458	0.070	16	34	31	-3
25	West Bengal	0.642	0.573	0.069	19	22	19	-3
26	Chhattisgarh	0.549	0.451	0.098	5	30	32	2
27	Jharkhand	0.574	0.434	0.140	2	29	33	4
28	Uttarakhand	0.652	0.487	0.165	1	19	28	9
29	Andaman & Nicobar Islands	0.708	0.678	0.030	33	6	6	0
30	Chandigarh	0.784	0.723	0.061	22	1	2	1
31	Dadra & Nagar Haveli	0.677	0.573	0.104	4	13	20	7
32	Daman & Diu	0.700	0.569	0.131	3	9	22	13
33	NCT Delhi	0.740	0.687	0.053	26	4	4	0
34	Lakshadweep	0.697	0.686	0.011	35	10	5	-5
35	Puducherry	0.725	0.676	0.049	28	5	7	2
All India		0.605	0.530	0.075				

Note: Both Goa and Kerala are ranked 2nd on HDI in 2006 and hence the 3rd rank has not been given to any State.

Table 4.6: Categorising States/UTs on the Basis of HDI Scores, 2006 and 1996

Category/Year	2006	1996
Category I 0.701 and above	Chandigarh, Goa, Kerala, NCT Delhi, Puducherry, Andaman & Nicobar Islands, Manipur	Kerala, Chandigarh, Goa
Category II 0.601 to 0.700	Nagaland, Daman & Diu, Lakshadweep, Maharashtra, Mizoram, Dadra & Nagar Haveli, Punjab, Himachal Pradesh, Tamil Nadu, Sikkim, Tripura, Uttarakhand, Arunachal Pradesh, Haryana, West Bengal, Gujarat, Meghalaya, Karnataka	NCT Delhi, Lakshadweep, Andaman & Nicobar Islands, Puducherry, Nagaland, Maharashtra, Punjab, Mizoram, Manipur
Category III 0.501 to 0.600	Assam, Jammu & Kashmir, Andhra Pradesh, Jharkhand, Chhattisgarh, Rajasthan, Orissa, Madhya Pradesh, Uttar Pradesh, Bihar	Meghalaya, Himachal Pradesh, Tamil Nadu, Sikkim, Tripura, Gujarat, West Bengal, Dadra & Nagar Haveli, Haryana, Daman & Diu, Karnataka, Arunachal Pradesh, Assam, Jammu & Kashmir, Andhra Pradesh
Category IV below 0.500		Uttarakhand, Rajasthan, Orissa, Uttar Pradesh, Chhattisgarh, Jharkhand, Madhya Pradesh, Bihar

HDI scores for 2006 and 1996 are presented in the thematic maps in Figures 4.1 and 4.2 respectively.

Figure 4.1: Human Development Index 2006

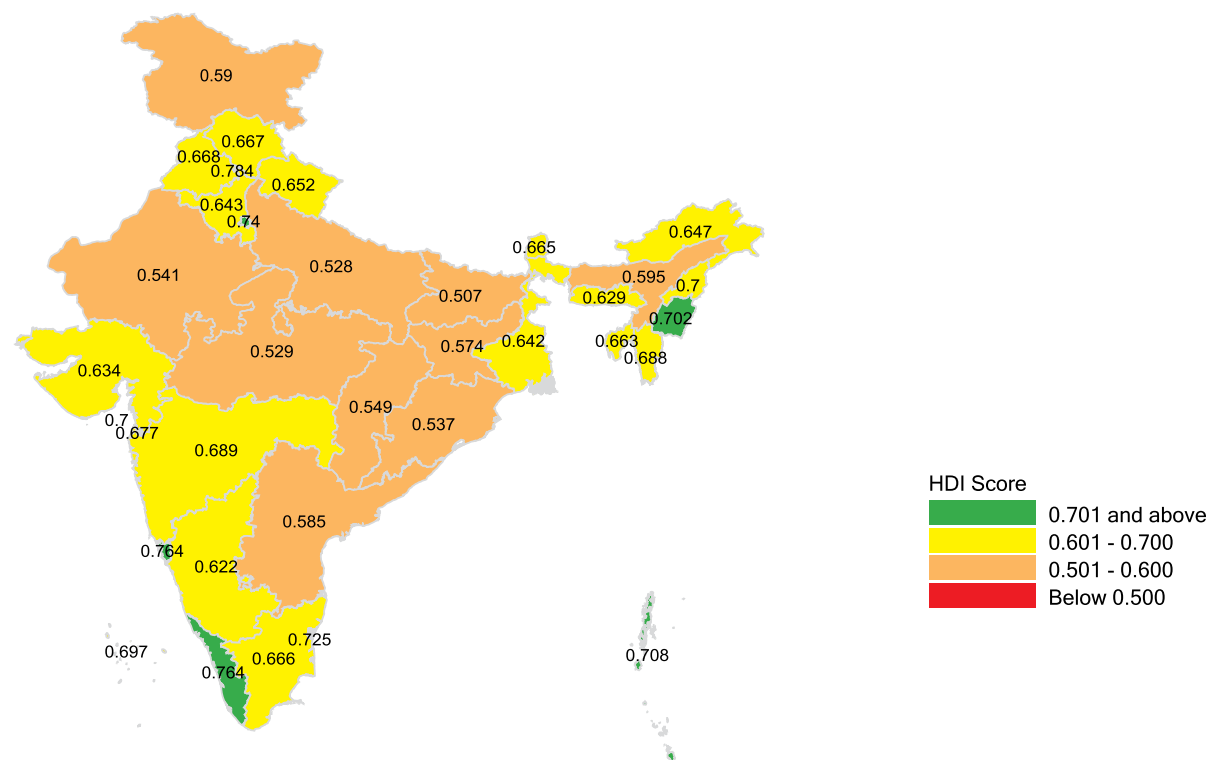
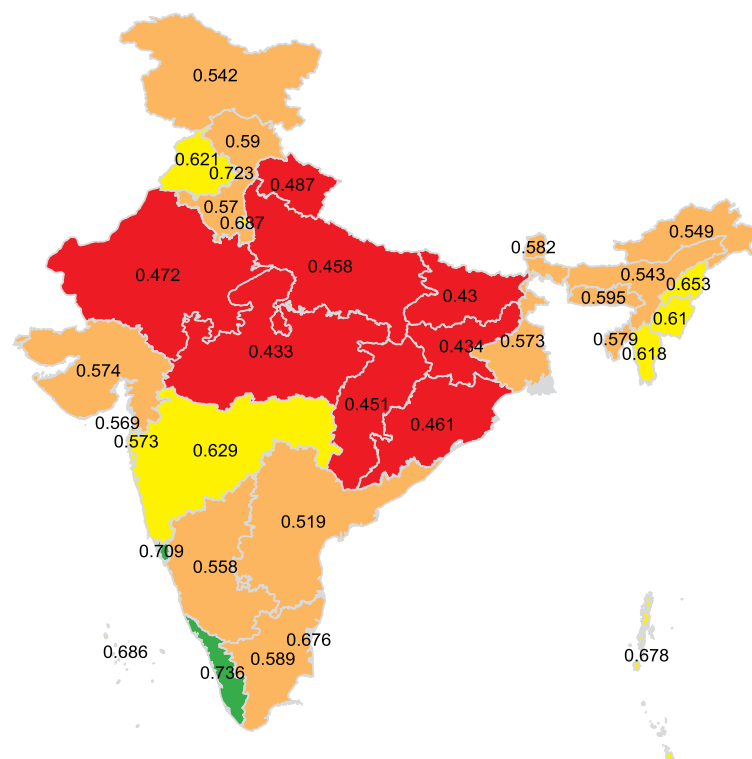


Figure 4.2: Human Development Index 1996



Four categories were demarcated on the basis of HDI Score (See Table 4.6). States/UTs with HDI values from 0.701 to 0.784 were the best performers and were placed in Category I (shaded green in Figures 4.1 and 4.2); States/UTs with HDI values between 0.601 to 0.700 were the second best performers and placed in Category II (shaded yellow); States/UTs with HDI values from 0.501 to 0.600 comprised the third level performers and were placed in Category III (shaded orange); and States/UTs with HDI values below 0.500 comprised the worst performers and were placed in Category IV (shaded red).

Some of the salient points emerging from the analysis of Tables 4.4, 4.5 and 4.6 and Figures 4.1 and 4.2 are listed below:

- The HDI score for India was 0.530 in 1996 and increased to 0.605 in 2006.
- There was significant overall improvement in performance on HDI over the decade, both in the All-India score and in the scores achieved by the States/UTs.
- 3 States/UTs achieved the highest HDI Category I in 1996 and 7 States/UTs in 2006 (shaded green).
- 9 States/UTs achieved the second highest set of HDI scores or were in HDI Category II in 1996 while 18 States/UTs achieved Category II in 2006 (shaded yellow).
- 15 States/UTs had the second lowest set of HDI scores or were in HDI Category III in 1996 and only 10 States/UTs remained in this Category in 2006 (shaded orange).
- 8 States/UTs had the lowest HDI scores or HDI Category IV in 1996 but there was no State in this Category in 2006 (shaded red).
- The 3 States/UTs that achieved Category I in both 1996 and 2006 were Kerala, Chandigarh and Goa. NCT Delhi, Puducherry, Andaman & Nicobar Islands and Manipur moved from Category II in 1996 to Category I in 2006.
- 8 States had low HDI scores or were in Category IV in 1996. These were Bihar, Madhya Pradesh, Jharkhand, Chhattisgarh, Uttar Pradesh, Orissa, Rajasthan and Uttarakhand (shaded red in Figure 4.2). None of these States/UTs remained in the low HDI category in 2006 (red in Figures 4.1 and 4.2).
- All the 8 HDI Category IV States in 1996 moved to higher HDI categories in 2006. While 7 of them moved to Category III or one category higher (from red in Figure 4.2 to orange in Figure 4.1), 1 State, Uttarakhand, achieved the highest gain in HDI score in the country (0.165), improved 9 ranks over the decade; and moved from Category IV to Category II (from red in Figure 4.2 to yellow in Figure 4.1).
- However, even Bihar, with the lowest HDI score in 1996 increased its score by 0.077 from 0.430 to 0.507. Further, the State was the 13th largest gainer on HDI score over the decade.
- Similarly, although Madhya Pradesh was ranked 34th among all the States/UTs on HDI in 1996 with a score of 0.433, its HDI score increased by 0.096 (higher than the All-India average increase of 0.075) and the State was the 7th largest gainer on HDI over the decade.
- Of the 10 Category III States in 2006, 7 were States that had moved upwards from Category IV. The other 3 were Assam, Jammu and Kashmir and Andhra Pradesh which remained in Cat-

egory III but improved their HDI scores over the decade.

- The number of States/UTs in Category II doubled from 9 to 18 over the decade. 5 Category II States/UTs remained in Category II. 4 States/UTs that were in this Category in 1996, moved to Category I in 2006. These were NCT Delhi, Puducherry, Andaman and Nicobar Islands and Manipur. Uttarakhand was a major achiever and moved into Category II from Category IV. Except for Andhra Pradesh, Assam and Jammu and Kashmir, all the other Category III States/UTs improved their HDI scores and moved to Category II.
- Kerala was ranked first in 1996 and achieved an HDI score of 0.736. It tied with Goa for the second position in 2006 with a score of 0.764.
- Chandigarh was placed second in 1996 with a score of 0.723 but achieved the highest HDI score of 0.784 in 2006.
- Goa was ranked third in 1996 with a score of 0.709. It tied with Kerala for the second rank with a score of 0.764 in 2006.
- NCT Delhi was placed fourth on HDI in both 1996 and 2006 but improved its score from 0.687 to 0.740.
- The largest gains in HDI scores over the decade were by Uttarakhand (0.165), Jharkhand (0.140), Daman & Diu (0.131), Dadra & Nagar Haveli (0.104) and Chhattisgarh and Arunachal Pradesh (both by 0.098).
- Other States/UTs which increased their HDI scores by more than the 0.075 points that were gained on an average by India as a whole, included Madhya Pradesh, Manipur, Tripura, Sikkim, Himachal Pradesh, Tamil Nadu, Bihar and Orissa.
- The largest gain in rank was by Daman & Diu (13 ranks) followed by Uttarakhand (9 ranks). Dadra & Nagar Haveli gained 7 ranks, Manipur 5 ranks, Jharkhand and Arunachal Pradesh gained 4 ranks each, Puducherry and Chhattisgarh gained 2 ranks each and Chandigarh, Madhya Pradesh and Goa gained 1 rank each.
- Bihar, Haryana, Nagaland, Andaman & Nicobar Islands and NCT Delhi retained their ranks on HDI over the decade.
- Andhra Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Kerala, Mizoram, Sikkim, Tamil Nadu and Tripura lost 1 rank each. Karnataka, Maharashtra, Orissa and Rajasthan, lost 2 ranks each over the decade.
- Uttar Pradesh and West Bengal lost 3 ranks each while Punjab lost 4 ranks.
- The largest losses in rank were in the case of Meghalaya (11 ranks) and Gujarat and Lakshadweep (5 ranks each).

The States/UTs that attained the best and worst scores on each of the three Dimensions constituting HDI, are given below.

Dimension I: 'A Long and Healthy Life'

- The States/UTs with the best performance on 'A Long and Healthy Life' Index in 2006, were Kerala, Goa, Chandigarh, Manipur and Lakshadweep.
- Kerala was the only State/UT that scored above 0.800 on this index in 2006.
- Meghalaya, Bihar, Rajasthan, Chhattisgarh, Assam, Uttar Pradesh, Orissa and Madhya Pradesh had scores below the All-India average on this index in 2006.

- The estimates for this index were lowest for Orissa and Madhya Pradesh.
- The value of this index declined over the decade for Lakshadweep and Puducherry due to worsening of the infant mortality rate in 2006.

Dimension 2: 'Knowledge'

- The highest scores on the 'Knowledge' Index in 2006 were achieved by NCT Delhi, Kerala, Chandigarh, Daman & Diu and Goa.
- Only NCT Delhi had a score above 0.700 for this Dimension with an Index value of 0.707.
- Karnataka, Orissa, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Uttar Pradesh, Jammu & Kashmir, Rajasthan, Bihar and Jharkhand were below the All-India average of 0.506 on the Knowledge Index in 2006.
- It is noteworthy that Arunachal Pradesh and Uttarakhand improved their scores on this Dimension by as much as 0.248 and 0.245 respectively.
- The score for the Knowledge Dimension decreased by 0.002 for Lakshadweep.

Dimension 3: 'A Decent Standard of Living'

- The States/UTs with the highest scores on the 'A Decent Standard of Living Index' in 2006

were Chandigarh, Goa, NCT Delhi, Puducherry and Haryana.

- While the score for this Dimension Index was more than 0.800 for Goa, NCT Delhi and Puducherry, it exceeded 0.900 for Chandigarh.
- Arunachal Pradesh, West Bengal, Jammu & Kashmir, Sikkim, Assam, Mizoram, Meghalaya, Rajasthan, Manipur, Orissa, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Chhattisgarh, Bihar and Jharkhand were below the All-India average of 0.730 on the 'A Decent Standard of Living' Index in 2006.
- The largest improvement in the value of the 'A Decent Standard of Living' Index was achieved by Jharkhand, Puducherry, Uttarakhand, Tripura, Chhattisgarh and Chandigarh, which achieved an increase between 0.104 and 0.188 in the value of this index.

GDI Scores and Ranks for States/UTs

Scores achieved by India and the States/UTs on GDI and on each of its three dimensions are presented in Table 4.7. Table 4.8 gives the GDI scores and ranks for India and the States/UTs, with the highest ranking State/UT getting rank 1.

Table 4.7: Dimension-wise GDI scores for States/UTs, 2006 and 1996

S.No.	States/UTs	GDI 2006				GDI 1996			
		HI 06	EdI 06	YI 06	GDI 06	HI 96	EdI 96	YI 96	GDI 96
1	Andhra Pradesh	0.584	0.422	0.716	0.574	0.525	0.346	0.656	0.509
2	Arunachal Pradesh	0.621	0.603	0.702	0.642	0.615	0.351	0.667	0.544
3	Assam	0.497	0.608	0.650	0.585	0.440	0.523	0.606	0.523
4	Bihar	0.536	0.377	0.524	0.479	0.474	0.274	0.449	0.399
5	Goa	0.792	0.652	0.797	0.747	0.733	0.627	0.711	0.691
6	Gujarat	0.600	0.529	0.742	0.624	0.540	0.454	0.682	0.559
7	Haryana	0.601	0.521	0.773	0.632	0.530	0.434	0.700	0.555
8	Himachal Pradesh	0.631	0.594	0.767	0.664	0.561	0.506	0.689	0.585
9	Jammu & Kashmir	0.600	0.466	0.639	0.568	0.527	0.411	0.638	0.525
10	Karnataka	0.632	0.494	0.707	0.611	0.591	0.403	0.642	0.545
11	Kerala	0.834	0.697	0.705	0.745	0.836	0.678	0.649	0.721
12	Madhya Pradesh	0.457	0.451	0.641	0.516	0.340	0.335	0.576	0.417
13	Maharashtra	0.697	0.587	0.748	0.677	0.626	0.516	0.704	0.616
14	Manipur	0.759	0.631	0.705	0.699	0.684	0.505	0.611	0.600
15	Meghalaya	0.564	0.609	0.700	0.624	0.570	0.565	0.640	0.592
16	Mizoram	0.698	0.640	0.723	0.687	0.566	0.630	0.641	0.612
17	Nagaland	0.719	0.644	0.727	0.697	0.585	0.626	0.666	0.626
18	Orissa	0.471	0.450	0.651	0.524	0.355	0.380	0.600	0.445
19	Punjab	0.680	0.558	0.749	0.663	0.634	0.479	0.701	0.605
20	Rajasthan	0.526	0.381	0.672	0.526	0.423	0.284	0.637	0.448
21	Sikkim	0.656	0.608	0.713	0.659	0.546	0.537	0.616	0.566
22	Tamil Nadu	0.684	0.559	0.722	0.655	0.589	0.469	0.671	0.576
23	Tripura	0.641	0.608	0.628	0.626	0.567	0.542	0.529	0.546
24	Uttar Pradesh	0.487	0.437	0.604	0.509	0.401	0.321	0.563	0.429
25	West Bengal	0.666	0.526	0.675	0.622	0.578	0.468	0.614	0.553
26	Chhattisgarh	0.524	0.413	0.688	0.542	0.392	0.335	0.576	0.434
27	Jharkhand	0.590	0.418	0.665	0.558	0.490	0.274	0.449	0.404
28	Uttarakhand	0.622	0.600	0.718	0.647	0.487	0.321	0.563	0.457
29	Andaman & Nicobar Islands	0.698	0.642	0.737	0.692	0.689	0.594	0.723	0.669
30	Chandigarh	0.774	0.684	0.832	0.763	0.741	0.633	0.744	0.706
31	Dadra & Nagar Haveli	0.679	0.619	0.722	0.673	0.562	0.480	0.667	0.569
32	Daman & Diu	0.716	0.660	0.654	0.677	0.546	0.458	0.624	0.543
33	NCT Delhi	0.674	0.703	0.727	0.701	0.640	0.641	0.707	0.663
34	Lakshadweep	0.728	0.627	0.551	0.635	0.757	0.636	0.589	0.660
35	Puducherry	0.721	0.638	0.759	0.706	0.774	0.564	0.645	0.661
All India		0.573	0.494	0.702	0.590	0.490	0.409	0.643	0.514

Note: **HI** is the Index of 'A long and healthy life' based on Infant Mortality Rate and Life Expectancy at age 1; **EdI** is the Index of 'Knowledge' based on 7+ Literacy Rate and Mean Years of Education; **YI** is the Index of 'A decent standard of living' based on Earned Income and **GDI** is the 'Gender Development Index'.

Table 4.8: GDI Scores, Score Differences, Ranks and Rank Differences for States/UTs, 2006 and 1996

S.No.	States/UTs	GDI Score 2006	GDI Score 1996	GDI Score 2006 - GDI Score 1996	Rank based on Score difference in Col. 5	Rank GDI 2006	Rank GDI 1996	Rank GDI 1996 - Rank GDI 2006
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8	Col 9
1	Andhra Pradesh	0.574	0.509	0.065	22	27	27	0
2	Arunachal Pradesh	0.642	0.544	0.098	8	18	23	5
3	Assam	0.585	0.523	0.062	24	26	26	0
4	Bihar	0.479	0.399	0.080	10	35	35	0
5	Goa	0.747	0.691	0.056	28	2	3	1
6	Gujarat	0.624	0.559	0.065	23	22	18	-4
7	Haryana	0.632	0.555	0.077	17	20	19	-1
8	Himachal Pradesh	0.664	0.585	0.079	13	13	14	1
9	Jammu & Kashmir	0.568	0.525	0.043	30	28	25	-3
10	Karnataka	0.611	0.545	0.066	21	25	22	-3
11	Kerala	0.745	0.721	0.024	33	3	1	-2
12	Madhya Pradesh	0.516	0.417	0.099	6	33	33	0
13	Maharashtra	0.677	0.616	0.061	25	10	9	-1
14	Manipur	0.699	0.600	0.099	7	6	12	6
15	Meghalaya	0.624	0.592	0.032	32	23	13	-10
16	Mizoram	0.687	0.612	0.075	18	9	10	1
17	Nagaland	0.697	0.626	0.071	19	7	8	1
18	Orissa	0.524	0.445	0.079	15	32	30	-2
19	Punjab	0.663	0.605	0.058	26	14	11	-3
20	Rajasthan	0.526	0.448	0.078	16	31	29	-2
21	Sikkim	0.659	0.566	0.093	9	15	17	2
22	Tamil Nadu	0.655	0.576	0.079	14	16	15	-1
23	Tripura	0.626	0.546	0.080	11	21	21	0
24	Uttar Pradesh	0.509	0.429	0.080	12	34	32	-2
25	West Bengal	0.622	0.553	0.069	20	24	20	-4
26	Chhattisgarh	0.542	0.434	0.108	4	30	31	1
27	Jharkhand	0.558	0.404	0.154	2	29	34	5
28	Uttarakhand	0.647	0.457	0.190	1	17	28	11
29	Andaman & Nicobar Islands	0.692	0.669	0.023	34	8	4	-4
30	Chandigarh	0.763	0.706	0.057	27	1	2	1
31	Dadra & Nagar Haveli	0.673	0.569	0.104	5	12	16	4
32	Daman & Diu	0.677	0.543	0.134	3	11	24	13
33	NCT Delhi	0.701	0.663	0.038	31	5	5	0
34	Lakshadweep	0.635	0.660	-0.025	35	19	7	-12
35	Puducherry	0.706	0.661	0.045	29	4	6	2
All India		0.590	0.514	0.076				

GDI scores for 2006 and 1996 are presented in the thematic maps in Figures 4.3 and 4.4 respectively.

Figure 4.3: Gender-related Development Index 2006

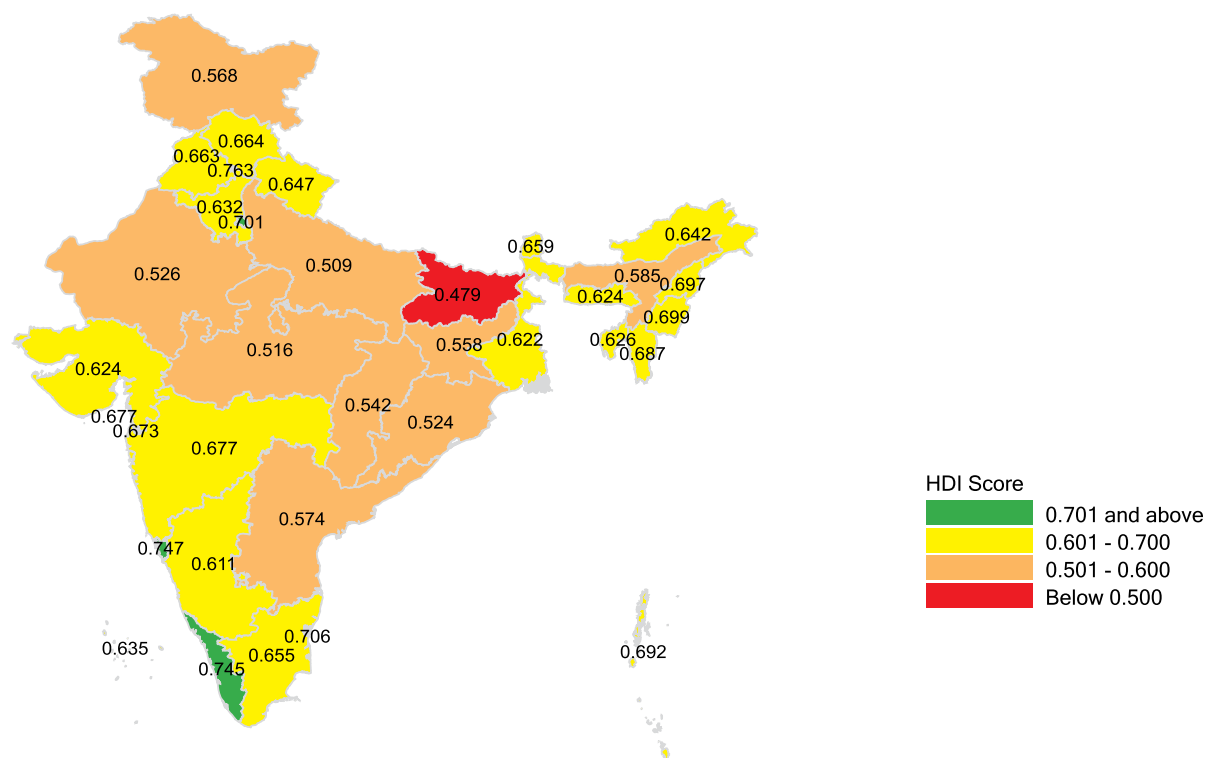


Figure 4.4: Gender-related Development Index 1996

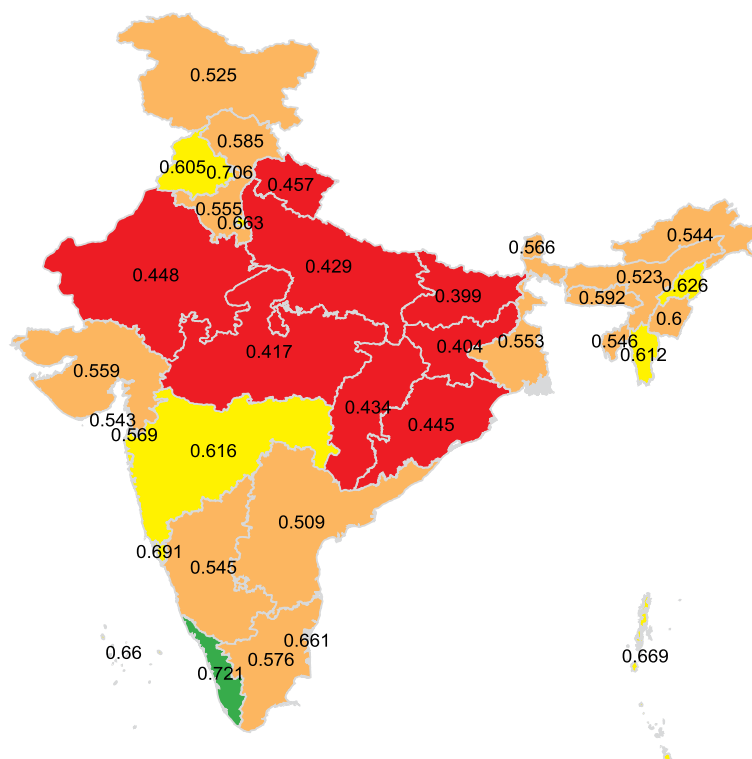


Table 4.9: Categorising States/UTs on the basis of GDI Scores, 2006 and 1996

Category/Year	2006	1996
Category I 0.701 and above	Chandigarh, Goa, Kerala, Puducherry, NCT Delhi	Kerala, Chandigarh
Category II 0.601 to 0.700	Manipur, Nagaland, Andaman & Nicobar Islands, Mizoram, Maharashtra, Daman & Diu, Dadra & Nagar Haveli, Himachal Pradesh, Punjab, Sikkim, Tamil Nadu, Uttarakhand, Arunachal Pradesh, Lakshadweep, Haryana, Tripura, Gujarat, Meghalaya, West Bengal, Karnataka	Goa, Andaman & Nicobar Islands, NCT Delhi, Puducherry, Lakshadweep, Nagaland, Maharashtra, Mizoram, Punjab
Category III 0.501 to 0.600	Assam, Andhra Pradesh, Jammu & Kashmir, Jharkhand, Chhattisgarh, Rajasthan, Orissa, Madhya Pradesh, Uttar Pradesh	Manipur, Meghalaya, Himachal Pradesh, Tamil Nadu, Dadra & Nagar Haveli, Sikkim, Gujarat, Haryana, West Bengal, Tripura, Karnataka, Arunachal Pradesh, Daman & Diu, Jammu & Kashmir, Assam, Andhra Pradesh
Category IV below 0.500	Bihar	Uttarakhand, Rajasthan, Orissa, Chhattisgarh, Uttar Pradesh, Madhya Pradesh, Jharkhand, Bihar

As in the case of HDI, States/UTs were divided into four categories (see Table 4.9), with Category I comprising the best performers (shaded green in Figures 4.3 and 4.4), Category II comprising the second best performers (shaded yellow), Category III comprising the third level performers (shaded orange) and Category IV comprising the worst performers (shaded red). States/UTs in Category I achieved GDI value between 0.701 to 0.784; States/UTs in Category II achieved GDI value between 0.601 to 0.700; States/UTs in Category III achieved GDI value between 0.501 to 0.600; and States/UTs in Category IV achieved GDI value below 0.500.

Some of the salient points emerging from analysis of Tables 4.7, 4.8 and 4.9 and Figures 4.3 and 4.4 are listed below:

- The GDI score for India was 0.514 in 1996 and increased to 0.590 in 2006.
- There was significant overall improvement in performance on GDI over the decade, both in the All-India score and in the scores achieved by 34 out of 35 States/UTs.
- 2 States/UTs achieved the highest GDI Category I in 1996 and 5 States/UTs in 2006 (shaded green).
- 9 States/UTs achieved the second highest set of GDI scores or were in GDI Category II in 1996 while 20 States/UTs achieved Category II in 2006 (shaded yellow).
- 16 States/UTs had the second lowest set of GDI scores or were in GDI Category III in 1996 but only 9 States/UTs remained in this Category in 2006 (shaded orange).
- 8 States/UTs had the lowest GDI scores or were in GDI Category IV in 1996 but only 1 State remained in this category in 2006 (shaded red).
- The 2 States/UTs that achieved Category I on GDI in both 1996 and 2006 were Kerala and Chandigarh. The 3 other States/UTs that achieved Category I on GDI in 2006 from Category II in 1996, were NCT Delhi, Puducherry and Goa.
- 8 States had low GDI scores or were in Category IV in 1996. These were Bihar, Jharkhand,

Madhya Pradesh, Uttar Pradesh, Chhattisgarh, Orissa, Rajasthan and Uttarakhand (shaded red in Figure 4.3). Of these only 1 State, Bihar, remained in the low GDI category in 2006 (red in Figures 4.3 and 4.4). The other 7 moved to higher GDI categories in 2006. While 6 of them moved to Category III or one category higher (from red in Figure 4.4 to orange in Figure 4.3), 1 State, Uttarakhand, achieved the highest gain in GDI score in the country (0.190), improved 11 ranks over the decade and moved from Category IV to Category II in 2006 (from red in Figure 4.4 to yellow in Figure 4.3).

- However, even Bihar, with the lowest GDI score in 1996 increased its score by 0.080 from 0.399 to 0.479. Further, the State was the 10th largest gainer on GDI over the decade.
- Similarly, although Madhya Pradesh was ranked 33rd among all the States/UTs on GDI in 1996 with a score of 0.417, its GDI score increased to 0.516 in 2006, or by 0.099 (higher than the All-India average increase of 0.076) and the State was the 6th largest gainer on GDI over the decade.
- Of the 9 Category III States in 2006, 6 were States that had moved upwards from Category IV. The other 3 were Assam, Andhra Pradesh and Jammu & Kashmir, which remained in Category III but improved their GDI scores over the decade.
- The number of States/UTs in Category II increased from 9 to 20 over the decade. 6 States/UTs that were in Category II in 1996 remained in the same category in 2006. These were Punjab, Lakshadweep, Andaman & Nicobar Islands, Nagaland, Maharashtra and Mizoram. As mentioned above, 3 States/UTs, NCT Delhi, Puducherry and Goa were in Category II in 1996 and moved to Category I in 2006. Except for Assam, Andhra Pradesh and Jammu & Kashmir, all the other States/UTs that were in Category III in 1996, improved their GDI scores and moved to Category II in 2006.
- Kerala was ranked first in 1996 and achieved a GDI score of 0.721. It moved to third place in 2006 with a score of 0.745.
- Chandigarh was placed second in 1996 with a score of 0.706 but achieved the highest GDI score at 0.763 in 2006.
- Goa was ranked third in 1996 with a GDI score of 0.691. It improved to second rank in 2006 with a score of 0.747.
- Andaman & Nicobar Islands was placed fourth in 1996 with a GDI score of 0.669. It ranked eighth in 2006.
- NCT Delhi was placed fifth on GDI in both 1996 and 2006 but improved its score from 0.663 to 0.701.
- The newly formed States of Uttarakhand, Jharkhand and Chhattisgarh achieved the largest gains on GDI and showed a marked improvement in performance on gender development over the decade. Between 1996 and 2006, these 3 States improved their GDI rank by 11, 5 and 1 places and GDI scores by 0.190, 0.154 and 0.108, respectively.
- Other States/UTs which increased their GDI scores by more than the All-India average gain of 0.076 points, included Daman & Diu, Dadra & Nagar Haveli, Madhya Pradesh, Manipur, Arunachal Pradesh, Sikkim, Bihar, Tripura, Uttar Pradesh, Himachal Pradesh, Tamil Nadu, Orissa, Rajasthan and Haryana.
- Major gainers in rank on GDI were Daman and Diu by 13 ranks; Uttarakhand by 11; Manipur by 6; Arunachal Pradesh and Jharkhand by 5.

Other gainers in rank included Dadra & Nagar Haveli by 4; Sikkim and Puducherry by 2; and Goa, Himachal Pradesh, Mizoram, Nagaland, Chhattisgarh and Chandigarh by 1 rank each.

- Andhra Pradesh, Assam, Bihar, Madhya Pradesh, NCT Delhi and Tripura retained their ranks on GDI over the decade.
- The largest losers in rank on GDI were Lakshadweep with a loss of 12 ranks and Meghalaya with 10 ranks. Additionally, West Bengal, Gujarat and Andaman and Nicobar Islands lost 4 ranks each; Punjab, Karnataka and Jammu and Kashmir lost 3 ranks each; Rajasthan, Orissa, Kerala, and Uttar Pradesh lost 2 ranks each; while Haryana, Maharashtra and Tamil Nadu lost 1 rank each.
- The GDI score declined over the decade in one State/UT, Lakshadweep, by 0.025 points due to weakening in performance in several indicators, as seen below.

The States/UTs that attained the best and worst scores on each of the three Dimensions constituting GDI, are given below.

Dimension 1: 'A Long and Healthy Life'

- As in the case of HDI, the States/UTs with the best performance on Dimension 1, 'A Long and Healthy Life' in 2006, were Kerala, Goa, Chandigarh, Manipur and Lakshadweep.
- Kerala was the only State/UT that scored value above 0.800 on this Index in 2006.
- Meghalaya, Bihar, Rajasthan, Chhattisgarh, Assam, Uttar Pradesh, Orissa and Madhya Pradesh had scores below the All-India average on this index in 2006.
- Although the value of this index was the highest for Kerala at 0.834 and high at 0.728 and 0.721 for Lakshadweep and Puducherry, it declined by 0.002, 0.029 and 0.053 over the decade for these States/UT and by 0.006 for Meghalaya. The decline in the value of the index was due to worsening of the infant mortality rate over the decade. (See Table 4.10).

Dimension 2: 'Knowledge'

- The highest scores on the 'Knowledge' Index in 2006 were achieved by NCT Delhi, Kerala, Chandigarh, Daman & Diu and Goa.
- Only NCT Delhi had a score above 0.700 for this Dimension with an Index value of 0.703.
- Orissa, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Uttar Pradesh, Jammu and Kashmir, Rajasthan, Bihar and Jharkhand were below the All-India average of 0.494 on the Knowledge Index in 2006.
- It is noteworthy that Uttarakhand, Arunachal Pradesh and Daman & Diu improved their scores on this Dimension by as much as 0.279, 0.252 and 0.202 respectively.

Table 4.10: Infant Mortality Rate in Selected States

	IMR 2006			IMR 1996		
	Males	Females	Total	Males	Females	Total
Kerala	14	16	15	13	14	14
Meghalaya	53	52	53	44.7	50.5	47.7
Lakshadweep	29	21	25	25.2	5.9	16.3
Puducherry	20	36	28	10.9	18.1	14.6
All India	56	59	57	71	73	72

Source: Statistical Tables p. 132 - 133

- The value of the Knowledge Index decreased by 0.009 in the case of Lakshadweep.

Dimension 3: 'A Decent Standard of Living'

- The five States/UTs with the highest scores on the 'A Decent Standard of Living Index' in 2006 were Chandigarh, Goa, Haryana, Himachal Pradesh and Puducherry.
- The score for this Dimension Index was more than 0.800 only in the case of Chandigarh.
- West Bengal, Jammu and Kashmir, Assam, Meghalaya, Rajasthan, Orissa, Uttar Pradesh, Madhya Pradesh, Tripura, Daman and Diu, Lakshadweep, Chhattisgarh, Bihar and Jharkhand were below the All-India average of 0.702 on the 'A Decent Standard of Living' Index in 2006.
- The largest improvement in the value of the 'A Decent Standard of Living' Index was achieved by Jharkhand, Puducherry, Uttarakhand and Chhattisgarh, which achieved an increase between 0.112 and 0.215 in the value of this index.
- The value of the 'A Decent Standard of Living' Index decreased by 0.038 in the case of Lakshadweep.

Gender Gaps in Development: Score and Rank Differences between HDI and GDI in 2006 and 1996 in States/UTs

Estimates of differences between HDI and GDI scores and ranks for the 35 States/UTs for 1996 and 2006 are presented in Table 4.11. Columns 3 and 4 present disparity between HDI and GDI scores attained by the 35 States/UTs in 2006 and 1996. The GDI score is less than the HDI score if gender disparities exist and equal to it if there are no gender dis-

parities. Change in the level of gender disparity in development between 1996 and 2006 is presented in column 5. Negative values show that gender disparity has increased over the decade while positive values show that it has decreased. Ranks based on the HDI-GDI gaps or differentials in 2006 and 1996 are presented in columns 6 and 7 respectively. The State/UT with the least gap between HDI and GDI is assigned the first rank.

Higher values of the differential between HDI and GDI in Table 4.11 columns 3 and 4 imply lack of gender balance in human development. It is observed that:

- There is a slight reduction in the differential between HDI and GDI for India which is 0.015 in 2006 from 0.016 in 1996.
- While gender imbalances exist in all States and UTs, in 2006 the imbalances were higher than the national average of 0.015 in 14 States and UTs. The differentials were largest in Lakshadweep (0.062), NCT Delhi (0.039) and Tripura (0.037), followed by Bihar (0.028), Daman & Diu (0.024), Jammu & Kashmir (0.021), Chandigarh (0.020), West Bengal (0.020), Uttar Pradesh and Puducherry (0.019), Kerala (0.018), Goa and Jharkhand (0.017) and Andaman & Nicobar Islands (0.016).
- Gender imbalance in Rajasthan was equal to the All-India level at 0.015.
- In 2006, gender imbalances were lower than the national average of 0.015 in as many as 20 States/UTs.
- In 2006, gender imbalances were lowest in Mizoram (0.002), Nagaland and Manipur (0.003), Himachal Pradesh and Dadra & Nagar Haveli (0.004) and Meghalaya, Arunachal Pradesh, Punjab and Uttarakhand (0.005).

Table 4.11: HDI and GDI Score Differences and Rank Differences for States/UTs, 2006 and 1996

S.No.	States/UTs	HDI - GDI Score 2006	HDI - GDI Score 1996	Change in HDI-GDI Gap in Scores (1996 - 2006)	Rank on HDI-GDI score 2006	Rank on HDI-GDI score 1996
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Andhra Pradesh	0.011	0.010	-0.001	14	8
2	Arunachal Pradesh	0.005	0.004	-0.001	7	3
3	Assam	0.010	0.020	0.010	12	25
4	Bihar	0.028	0.031	0.004	32	34
5	Goa	0.017	0.019	0.002	23	23
6	Gujarat	0.010	0.015	0.005	13	15
7	Haryana	0.011	0.015	0.004	15	13
8	Himachal Pradesh	0.004	0.005	0.001	4	4
9	Jammu & Kashmir	0.021	0.017	-0.005	30	21
10	Karnataka	0.011	0.012	0.001	16	9
11	Kerala	0.018	0.015	-0.003	25	14
12	Madhya Pradesh	0.013	0.016	0.003	19	19
13	Maharashtra	0.012	0.013	0.001	18	11
14	Manipur	0.003	0.010	0.007	3	7
15	Meghalaya	0.005	0.003	-0.002	6	1
16	Mizoram	0.002	0.006	0.005	1	5
17	Nagaland	0.003	0.028	0.025	2	30
18	Orissa	0.013	0.015	0.002	20	16
19	Punjab	0.005	0.016	0.011	8	17
20	Rajasthan	0.015	0.024	0.009	21	26
21	Sikkim	0.006	0.016	0.010	10	18
22	Tamil Nadu	0.011	0.013	0.001	17	10
23	Tripura	0.037	0.033	-0.004	33	35
24	Uttar Pradesh	0.019	0.030	0.010	27	31
25	West Bengal	0.020	0.020	0.000	28	24
26	Chhattisgarh	0.008	0.017	0.009	11	22
27	Jharkhand	0.017	0.030	0.013	24	32
28	Uttarakhand	0.005	0.030	0.024	9	33
29	Andaman & Nicobar Islands	0.016	0.009	-0.007	22	6
30	Chandigarh	0.020	0.017	-0.004	29	20
31	Dadra & Nagar Haveli	0.004	0.003	0.000	5	2
32	Daman & Diu	0.024	0.026	0.003	31	29
33	NCT Delhi	0.039	0.024	-0.015	34	27
34	Lakshadweep	0.062	0.026	-0.036	35	28
35	Puducherry	0.019	0.015	-0.004	26	12
All India		0.015	0.016	0.001		

- Among the other States/UTs with differentials below the national average, the gap was relatively larger in Orissa and Madhya Pradesh (0.013), Maharashtra, (0.012), Tamil Nadu, Karnataka and Haryana and Andhra Pradesh (0.011); Gujarat and Assam (0.010), Chhattisgarh, (0.008), and Sikkim (0.006).

Analysing the extent to which States/UTs were able to close the existing gap between HDI and GDI over the decade (Table 4.11 column 5) shows that:

- The largest reduction in the gap between HDI and GDI during the period from 1996 to 2006 was in the case of Nagaland, Uttarakhand and Jharkhand, which achieved a reduction of 0.025, 0.024 points and 0.013 points respectively.
- Several other States also progressed towards closing the gap between HDI and GDI. These include Punjab, Sikkim, Uttar Pradesh, Assam, Rajasthan and Chhattisgarh which reduced the gap between HDI and GDI over the decade by 0.011 to 0.009 points; Manipur by 0.007 points; Gujarat and Mizoram by 0.005 points; and Haryana, Bihar, Madhya Pradesh, Daman & Diu, Goa, Orissa, Tamil Nadu, Karnataka, Maharashtra and Himachal Pradesh by 0.001 to 0.004 points.
- There was neither progress nor worsening of differentials between HDI and GDI in the case of West Bengal, and Dadra & Nagar Haveli.
- There were small increases (0.001 to 0.004) in differentials between HDI and GDI in Andhra Pradesh, Arunachal Pradesh, Meghalaya, Kerala, Tripura, Puducherry and Chandigarh and larger increases (0.005 to 0.007) for Jammu & Kashmir and Andaman & Nicobar Islands. However, the differentials increased sharply for NCT Delhi (0.015) and Lakshadweep (0.036).

Sensitivity of HDI and GDI Scores to Inclusion of Other Critical Indicators

It is important to stress that the value of HDI and GDI is sensitive to choice of indicators and goals posts. Despite the severe data gaps pertaining to Life Expectancy whether at Birth (LEB) or at age 1, this indicator is widely used both nationally and internationally. Data for Life Expectancy is available only for 16 out of 35 States/UTs. Hence the average for India/value for adjacent States has been applied to the remaining States/UTs, thereby raising the value of the health index for these States/UTs. Further, estimates are not available at the district level and the indicator does not reflect the systematic bias faced by women and girl children in the context of high morbidity and malnutrition.

In this context, the Eleventh Plan notes³¹ that “High levels of malnutrition continue to affect a large part of our child population, limiting their learning capacity and influencing morbidity and mortality ratios in the country. Our maternal mortality ratio and infant mortality rate are far too high. The incidence of anaemia among women and children is at unacceptable levels. Far too large a proportion of the population, especially in rural areas, lacks access to affordable health care. These problems need to be addressed by multiple interventions, many of which range beyond curative health care. These include dietary improvement, nutrition supplementation for children, better child care practices, and access to safe drinking water, improved sanitation, and immunization. However, these efforts must be accompanied by a much better system of affordable curative health care which is lacking at present.”

As is well known, estimates of the maternal mortality ratio (MMR) for India are excessively high in India at 254 per 100,000 live births for 2004-06 compared with only 10 for Japan and 56 for China. As

³¹ Planning Commission, Eleventh Plan 2007-12, Volume 2, p. 59.

Table 4.12: Maternal Mortality Ratio (MMR) - Major States

Major States	2001-03	2004-06
Andhra Pradesh	195	154
Assam	490	480
Bihar/Jharkhand	371	312
Gujarat	172	160
Haryana	162	186
Karnataka	228	213
Kerala	110	95
Madhya Pradesh/Chhattisgarh	379	335
Maharashtra	149	130
Orissa	358	303
Punjab	178	192
Rajasthan	445	388
Tamil Nadu	134	111
Uttar Pradesh/Uttarakhand	517	440
West Bengal	194	141
India	301	254

Source: SRS System, Office of the Registrar General of India

presented in Table 4.12 estimates of MMR for Uttar Pradesh/Uttarakhand, Assam, Rajasthan, Madhya Pradesh/Chhattisgarh, Bihar/Jharkhand and Orissa are unacceptably high and need urgent attention and action.

However, it needs to be noted that the most serious gender discrimination that confronts us is female foeticide that is reflected in the alarmingly low sex ratio. Special cognisance needs to be taken of this since it is not accounted for while calculating GDI. While Punjab, Haryana, Chandigarh, NCT Delhi, Gujarat and Himachal Pradesh attain higher than average scores on GDI, the sex ratio reported for Punjab at 798 and Haryana at 819 as also the estimates for Chandigarh, NCT Delhi, Gujarat, Himachal Pradesh and other States are cause for serious concern (Table 4.13).

Where critical indicators, such as child sex ratio, MMR, etc., show unacceptable values, even if a State/UT performs well on GDI, it must be recognised that the situation warrants further investigation.

Table 4.13: Child Sex Ratio (0-6 years) States/UTs, 2001

S.No.	States/Union Territories	Females/ 1000 Males
1	Andhra Pradesh	961
2	Arunachal Pradesh	964
3	Assam	965
4	Bihar	942
5	Goa	938
6	Gujarat	883
7	Haryana	819
8	Himachal Pradesh	896
9	Jammu & Kashmir	941
10	Karnataka	946
11	Kerala	960
12	Madhya Pradesh	932
13	Maharashtra	913
14	Manipur	957
15	Meghalaya	973
16	Mizoram	964
17	Nagaland	964
18	Orissa	953
19	Punjab	798
20	Rajasthan	909
21	Sikkim	963
22	Tamil Nadu	942
23	Tripura	966
24	Uttar Pradesh	916
25	West Bengal	960
26	Chhattisgarh	975
27	Jharkhand	965
28	Uttarakhand	908
29	Andaman & Nicobar Islands	957
30	Chandigarh	845
31	Dadra & Nagar Haveli	979
32	Daman & Diu	926
33	NCT Delhi	868
34	Lakshadweep	959
35	Puducherry	967
All India		927

Source: Census of India 2001.

Chapter 5 presents the calculated GEM indices for India and the States/UTs.

GEM Estimates for India and the States/UTs: Results and Analysis

5. GEM Estimates for India and the States/UTs: Results and Analysis

Gender Empowerment Measure (GEM) is intended to measure women's and men's ability to participate actively in economic and political life and their command over economic resources. It focuses on opportunities and captures gender inequality in three key areas, 'Political Participation and Decision-making Power', 'Economic Participation and Decision-making Power' and 'Power over Economic Resources'. The indicators used to estimate each of these dimensions are listed below:

Indicators for the Dimension 'Political Participation and Decision-making Power'

- i) % Share of Parliamentary Seats (elected)
- ii) % Share of Seats in Legislature (elected)
- iii) % Share of Seats in *Zilla Parishads* (elected)
- iv) % Share of Seats in *Gram Panchayats* (elected)
- v) % Candidates in Electoral Process in National Parties
- vi) % Electors exercising the right to vote

Indicators for the Dimension 'Economic Participation and Decision-making Power'

- i) % Share of officials in service in Indian Administrative Service, Indian Police Service and Indian Forest Service
- ii) % Share of enrolment in medical and engineering colleges

Indicators for the Dimension 'Power over Economic Resources'

- i) % Female/Male operational land holdings (due to data gaps in assets)
- ii) % Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)
- iii) Female/Male Estimated Earned Income Share per capita per annum.

Data was collected on each of the above to estimate GEM for India and 35 States/UTs for 1996 and 2006. In the provisional Summary Report released on 8th March, 2009, All-India averages were applied (or adjustments were made for data gaps) for an indicator for a State/UT where no data was available. However, since this adjustment led to higher ranks for States/UTs where a political or economic activity was non-existent, such as the case of election to *Gram Panchayats*, instead of replacing the data gap with the All-India average, the score for that State/UT for the Dimension(s) was based on the indicators for which data was available. The Dimension score was determined by dividing the total score for the indicators for which data was available, by the number of indicators for which data was available. Details regarding indicators for which data gaps constrained the estimation of GEM are listed in detail in Chapter 6.

Table 5.1: GEM Scores for India, 2006 and 1996

Year	PI	EI	PoERI	GEM
2006	0.625	0.546	0.319	0.497
1996	0.573	0.443	0.231	0.416

Note: **PI** = Index of 'Political Participation & Decision-making Power'; **EI** = Index of 'Economic Participation and Decision-making Power'; **PoERI** = Index of 'Power over Economic Resources'; and **GEM** = Gender Empowerment Measure

The aggregate score for GEM for India was 0.497 in 2006 and 0.416 in 1996 (Table 5.1).

The GEM scores for India estimated by UNDP are a very low 0.228 (UNDP HDR 1998). Using the indicators listed above is more relevant for India and although it yields GEM scores that are more than double (0.497) of those estimated by UNDP, the values attained still reflect the existence of sharp disparities in gender empowerment.

Scores for the three composite indices, Index of 'Political Participation & Decision-making Power' (PI), Index of 'Economic Participation and Decision-making Power' (EI) and Index of 'Power over Economic Resources' (PoERI) are also presented in Table 5.1. The scores are highest for PI at 0.573 and lowest for PoERI at 0.231 in 1996. While all three indices reflect an increase over the decade, the increase is smallest for PI (from 0.573 in 1996 to 0.625 in

2006) and largest for EI (from 0.443 in 1996 to 0.546 in 2006). The Index 'Power over Economic Resources' (PoERI) increased from 0.231 in 1996 to 0.319 in 2006.

GEM Scores and Ranks for States/UTs

Scores achieved by India and the States/UTs on GEM and on each of its three dimensions are presented in Table 5.2. Improvement in GEM scores attained by India and the States/UTs over the decade and ranks based on scores are presented in Table 5.3, with the highest ranking State/UT getting rank 1.

States/UTs were divided into four categories (see Table 5.4), with Category I comprising the best performers (shaded green in Figures 5.1 and 5.2), Category II comprising the second best performers (shaded yellow), Category III comprising the third level performers (shaded orange) and Category IV comprising the worst performers (shaded red). States/UTs in Category I achieved GEM index value between 0.485 and 0.564; States/UTs in Category II achieved GEM index value between 0.416 and 0.485; States/UTs in Category III achieved GEM index value between 0.316 and 0.415; and States/UTs in Category IV achieved GEM index value between 0.165 and 0.315.

Table 5.2: Dimension-wise GEM Scores, 2006 and 1996

S. No.	State/UT	GEM 2006				GEM 1996			
		PI	EI	PoERI	GEM	PI	EI	PoERI	GEM
1	Andhra Pradesh	0.628	0.597	0.418	0.547	0.559	0.498	0.344	0.467
2	Arunachal Pradesh	0.482	0.566	0.360	0.469	0.223	0.370	0.330	0.307
3	Assam	0.588	0.476	0.187	0.417	0.529	0.354	0.057	0.313
4	Bihar	0.628	0.252	0.258	0.379	0.399	0.303	0.133	0.278
5	Goa	0.494	0.697	0.463	0.551	0.458	0.638	0.387	0.494
6	Gujarat	0.585	0.554	0.317	0.485	0.544	0.426	0.256	0.409
7	Haryana	0.682	0.586	0.328	0.532	0.604	0.558	0.204	0.455
8	Himachal Pradesh	0.696	0.605	0.318	0.540	0.491	0.482	0.206	0.393
9	Jammu & Kashmir	0.407	0.451	0.207	0.355	0.358	0.474	0.147	0.326
10	Karnataka	0.581	0.611	0.385	0.526	0.549	0.417	0.301	0.422
11	Kerala	0.610	0.537	0.426	0.525	0.561	0.505	0.393	0.486
12	Madhya Pradesh	0.632	0.531	0.225	0.463	0.622	0.430	0.167	0.406

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S. No.	State/UT	GEM 2006				GEM 1996			
		PI	EI	PoERI	GEM	PI	EI	PoERI	GEM
13	Maharashtra	0.605	0.567	0.376	0.516	0.556	0.461	0.298	0.438
14	Manipur	0.498	0.403	0.353	0.418	0.585	0.404	0.151	0.380
15	Meghalaya	0.279	0.176	0.583	0.346	0.407	0.131	0.156	0.231
16	Mizoram	0.250	0.418	0.455	0.374	0.250	0.338	0.349	0.312
17	Nagaland	0.250	0.254	0.364	0.289	0.249	0.040	0.205	0.165
18	Orissa	0.635	0.375	0.169	0.393	0.611	0.293	0.084	0.329
19	Punjab	0.707	0.643	0.191	0.514	0.634	0.613	0.106	0.451
20	Rajasthan	0.627	0.490	0.208	0.442	0.640	0.438	0.130	0.403
21	Sikkim	0.536	0.581	0.223	0.447	0.393	0.327	0.178	0.300
22	Tamil Nadu	0.611	0.480	0.404	0.498	0.499	0.526	0.352	0.459
23	Tripura	0.491	0.408	0.247	0.382	0.552	0.305	0.148	0.335
24	Uttar Pradesh	0.625	0.517	0.213	0.452	0.565	0.303	0.134	0.334
25	West Bengal	0.678	0.426	0.202	0.435	0.643	0.308	0.098	0.350
26	Chhattisgarh	0.590	0.495	0.309	0.464	0.622	0.430	0.168	0.407
27	Jharkhand	0.614	0.415	0.277	0.435	0.399	0.303	0.133	0.278
28	Uttarakhand	0.556	0.566	0.276	0.466	0.565	0.303	0.135	0.334
29	Andaman & Nicobar Islands	0.701	0.431	0.547	0.560	0.575	0.355	0.381	0.437
30	Chandigarh	0.505	0.715	0.279	0.500	0.514	0.683	0.151	0.449
31	Dadra & Nagar Haveli	0.590	0.459	0.389	0.479	0.532	0.333	0.290	0.385
32	Daman & Diu	0.594	0.490	0.426	0.503	0.575	0.330	0.333	0.413
33	NCT Delhi	0.609	0.657	0.426	0.564	0.560	0.597	0.280	0.479
34	Lakshadweep	0.575	0.417	0.397	0.463	0.577	0.337	0.341	0.418
35	Puducherry	0.585	0.624	0.464	0.558	0.282	0.565	0.371	0.406
All India		0.625	0.546	0.319	0.497	0.573	0.443	0.231	0.416

Note: **PI** = Index of 'Political Participation & Decision-making Power'; **EI** = Index of 'Economic Participation and Decision-making Power'; **PoERI** = Index of 'Power over Economic Resources'; and **GEM** = Gender Empowerment Measure.

Table 5.3: GEM Scores and Ranks for States/UTs, 2006 and 1996

S.No.	States/UTs	GEM Scores 2006	GEM Scores 1996	GEM Rank 2006	GEM Rank 1996	GEM Rank 1996-2006	GEM Score Difference
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
1	Andhra Pradesh	0.547	0.467	5	4	-1	0.081
2	Arunachal Pradesh	0.469	0.307	17	30	13	0.162
3	Assam	0.417	0.313	28	28	0	0.104
4	Bihar	0.379	0.278	31	33	2	0.101
5	Goa	0.551	0.494	4	1	-3	0.057
6	Gujarat	0.485	0.409	15	14	-1	0.077
7	Haryana	0.532	0.455	7	6	-1	0.077
8	Himachal Pradesh	0.540	0.393	6	19	13	0.147
9	Jammu & Kashmir	0.355	0.326	33	27	-6	0.029
10	Karnataka	0.526	0.422	8	11	3	0.103
11	Kerala	0.525	0.486	9	2	-7	0.038
12	Madhya Pradesh	0.463	0.406	21	16	-5	0.056
13	Maharashtra	0.516	0.438	10	9	-1	0.078
14	Manipur	0.418	0.380	27	21	-6	0.038

Contd...

S.No.	States/UTs	GEM Scores 2006	GEM Scores 1996	GEM Rank 2006	GEM Rank 1996	GEM Rank 1996-2006	GEM Score Difference
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
15	Meghalaya	0.346	0.231	34	34	0	0.115
16	Mizoram	0.374	0.312	32	29	-3	0.062
17	Nagaland	0.289	0.165	35	35	0	0.124
18	Orissa	0.393	0.329	29	26	-3	0.064
19	Punjab	0.514	0.451	11	7	-4	0.063
20	Rajasthan	0.442	0.403	24	18	-6	0.039
21	Sikkim	0.447	0.300	23	31	8	0.147
22	Tamil Nadu	0.498	0.459	14	5	-9	0.039
23	Tripura	0.382	0.335	30	23	-7	0.047
24	Uttar Pradesh	0.452	0.334	22	25	3	0.118
25	West Bengal	0.435	0.350	25	22	-3	0.086
26	Chhattisgarh	0.464	0.407	19	15	-4	0.058
27	Jharkhand	0.435	0.278	26	32	6	0.157
28	Uttarakhand	0.466	0.334	18	24	6	0.132
29	Andaman & Nicobar Islands	0.560	0.437	2	10	8	0.122
30	Chandigarh	0.500	0.449	13	8	-5	0.050
31	Dadra & Nagar Haveli	0.479	0.385	16	20	4	0.094
32	Daman & Diu	0.503	0.413	12	13	1	0.090
33	NCT Delhi	0.564	0.479	1	3	2	0.085
34	Lakshadweep	0.463	0.418	20	12	-8	0.045
35	Puducherry	0.558	0.406	3	17	14	0.152
All India		0.497	0.416				0.081

Table 5.4: Categorising States/UTs on the basis of GEM Scores, 2006 and 1996

Category/Year	2006	1996
Category I Above 0.485 to 0.564	NCT Delhi, Andaman & Nicobar Islands, Puducherry, Goa, Andhra Pradesh, Himachal Pradesh, Haryana, Karnataka, Kerala, Maharashtra, Punjab, Daman & Diu, Chandigarh and Tamil Nadu	Goa and Kerala
Category II 0.416 to 0.485	Gujarat, Dadra & Nagar Haveli, Arunachal Pradesh, Uttarakhand, Chhattisgarh, Madhya Pradesh, Uttar Pradesh, Sikkim, Lakshadweep, Rajasthan, West Bengal, Jharkhand, Manipur and Assam	NCT Delhi, Andhra Pradesh, Tamil Nadu, Haryana, Punjab, Maharashtra, Chandigarh, Karnataka, Andaman & Nicobar Islands and Lakshadweep
Category III 0.316 to 0.415	Orissa, Tripura, Bihar, Mizoram, Jammu & Kashmir and Meghalaya	Gujarat, Chhattisgarh, Madhya Pradesh, Puducherry, Rajasthan, Himachal Pradesh, Daman & Diu, Manipur, Dadra & Nagar Haveli, West Bengal, Tripura, Uttarakhand, Uttar Pradesh, Orissa and Jammu & Kashmir
Category IV 0.165 to 0.315	Nagaland	Assam, Mizoram, Arunachal Pradesh, Sikkim, Jharkhand, Bihar, Meghalaya, Nagaland

GEM scores for 2006 and 1996 are presented in the thematic maps in Figures 5.1 and 5.2 respectively.

Figure 5.1: Gender Empowerment Measure 2006

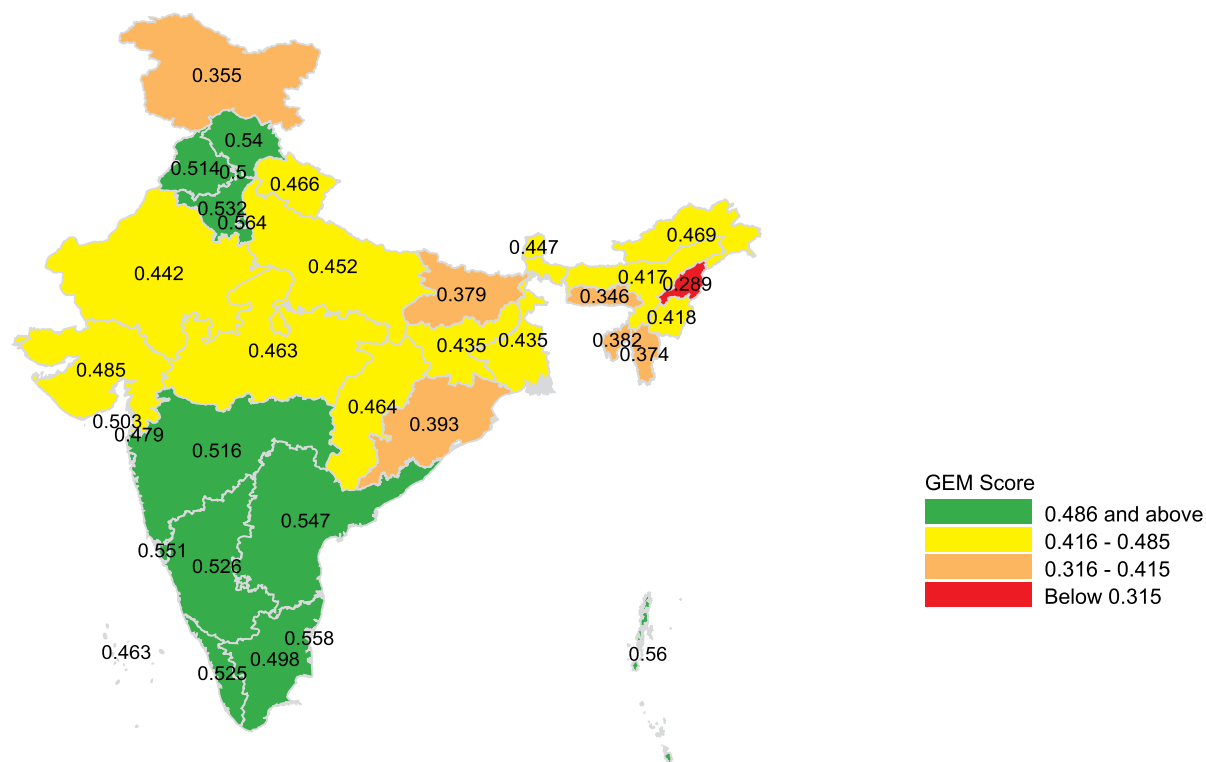
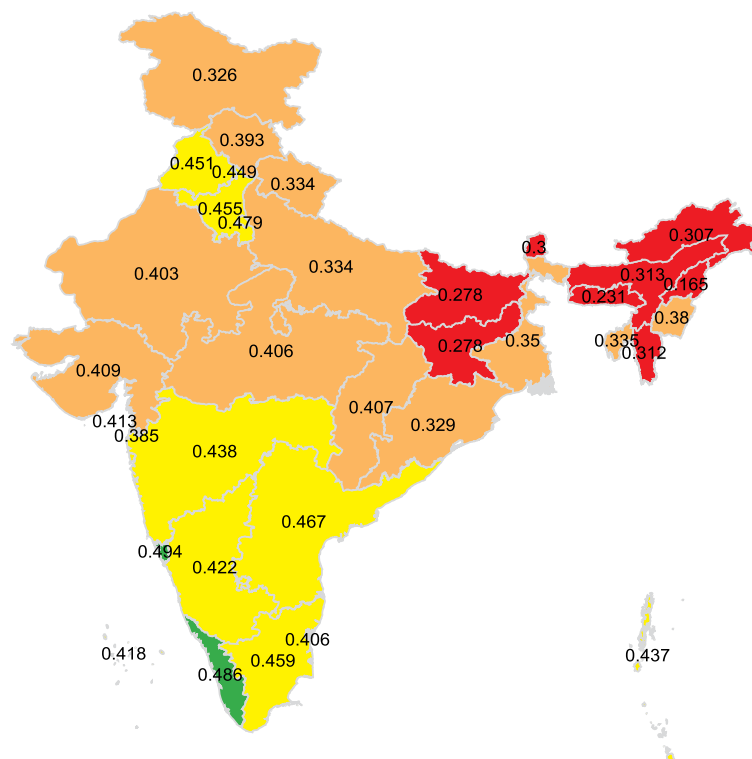


Figure 5.2: Gender Empowerment Measure 1996



Some of the salient points emerging from analysis of Tables 5.2, 5.3 and Figures 5.1 and 5.2 are listed below:

- The GEM score for India was 0.416 in 1996 and increased to 0.497 in 2006.
- There was overall improvement in performance on GEM over the decade, both in the All-India score and in the scores achieved by all the States/UTs.
- 14 States/UTs achieved the highest GEM Category I in 2006 while only 2 had achieved scores for this category 1996 (shaded green).
- 14 States/UTs achieved the second highest set of GEM scores or were in GEM Category II in 2006 while only 10 States/UTs achieved Category II in 1996 (shaded yellow).
- Only 6 States/UTs achieved the second lowest set of GEM scores or were in GEM Category III in 2006 while as many as 15 States/UTs were in this Category in 1996 (shaded orange).
- Only 1 State remained in the GEM Category IV in 2006 whereas 8 States/UTs were in this category in 1996 (shaded red).
- The States/UTs that achieved Category I on GEM in both 1996 and 2006 were Goa and Kerala. Of the other States/UTs that achieved Category I on GEM in 2006, 9 States/UTs were in Category II in 1996. These were NCT Delhi, Andhra Pradesh, Tamil Nadu, Haryana, Punjab, Maharashtra, Chandigarh, Karnataka and Andaman and Nicobar Islands. Daman & Diu, Puducherry and Himachal Pradesh moved from Category III in 1996 to Category I in 2006.
- 8 States had low GEM scores or were in Category IV in 1996. These were Assam, Mizoram, Arunachal Pradesh, Sikkim, Jharkhand, Bihar, Meghalaya and Nagaland (shaded red in Figure 5.2). Of these, only Nagaland remained in the low GEM category in 2006 (red in Figures 5.1 and 5.2). The other 7 States/UTs moved to higher GEM categories in 2006.
- Goa was ranked first in 1996 and achieved a GEM score of 0.494. It moved to fourth place in 2006 with a score of 0.551.
- Kerala was placed second in 1996 with a score of 0.486 but moved down to the ninth rank in 2006 with a GEM score of 0.525.
- Andhra Pradesh was ranked fourth in 1996 with a score of 0.467. It moved to fifth rank in 2006 with a score of 0.547.
- The newly formed States of Jharkhand and Uttarakhand achieved large gains on GEM scores of 0.157 and 0.132 respectively and improved their ranks on GEM by 6 positions each over the decade. While the GEM score for Uttar Pradesh and Bihar also increased significantly, the improvement in their GEM scores was lower in comparison (0.118 and 0.101 respectively). However, Chhattisgarh improved its score on GEM by only 0.058, compared with an improvement of 0.056 by Madhya Pradesh. These States lost 4 and 5 ranks respectively over the decade.
- Other States/UTs which increased their GEM scores by more than the All-India average increase of 0.081 points included Arunachal Pradesh, Puducherry, Himachal Pradesh, Sikkim, Andaman and Nicobar Islands, Nagaland, Dadra and Nagar Haveli, Meghalaya, Daman and Diu, Assam, Karnataka, West Bengal and NCT Delhi.
- States/UTs that improved their rank on GEM over the decade were Arunachal Pradesh, Himachal Pradesh and Puducherry by 13 and 14 ranks respectively; Sikkim and Andaman and Nico-

bar Islands by 8 ranks each; and Jharkhand and Uttarakhand by 6 ranks each.

- Other gainers on rank included Dadra & Nagar Haveli by 4 ranks; Uttar Pradesh and Karnataka by 3 ranks; Bihar and NCT Delhi by 2 ranks each and Daman and Diu by 1 rank.
- Assam, Meghalaya and Nagaland were the only States that retained their rank on GEM over the decade.
- The States/UTs that suffered the largest losses in rank on GEM were Tamil Nadu (9 ranks); Lakshadweep (8 ranks); and Kerala and Tripura (7 ranks) Jammu & Kashmir, Rajasthan and Manipur (6 ranks), Chandigarh and Madhya Pradesh (5 ranks).
- Additionally, Chhattisgarh and Punjab each lost 4 ranks; Goa, Mizoram, Orissa and West Bengal each lost 3 ranks; Maharashtra, Gujarat, Andhra Pradesh and Haryana each lost 1 rank.

The States/UTs that attained the best scores on each of the three Dimensions constituting GEM, in 2006, are given below.

GEM Dimension 1: 'Political Participation and Decision-making Power'

- The States/UTs with the best performance on Dimension 1, 'Political Participation and Decision-making Power' in 2006, were Punjab, Andaman & Nicobar Islands, Himachal Pradesh, Haryana and West Bengal.
- In 2006, both Punjab and Andaman & Nicobar Islands had a score above 0.700 for this Dimension with an Index value of 0.707 and 0.701 respectively.
- Other States/UTs with 2006 scores above the All-India value of 0.625 on this Dimension

were Orissa, Madhya Pradesh, Bihar, Andhra Pradesh, Rajasthan, Haryana, Himachal Pradesh and West Bengal.

- While Punjab moved up during the decade from third position to first position on this Dimension, West Bengal moved down from first to fifth position and Rajasthan from second to tenth position.

GEM Dimension 2: 'Economic Participation and Decision-making Power'

- The States/UTs that achieved high scores on the 'Economic Participation and Decision-making Power' Index in 2006 and also in 1996 were Chandigarh, Goa, NCT Delhi, Punjab and Puducherry.
- Only Chandigarh had a score above 0.700 for this Dimension with an Index value of 0.715 in 2006.
- In addition to the 5 States/UTs mentioned above, those scoring above the All-India value of 0.546 on this Dimension in 2006, were Karnataka, Himachal Pradesh, Andhra Pradesh, Haryana, Sikkim, Maharashtra, Arunachal Pradesh, Uttarakhand and Gujarat.

GEM Dimension 3: 'Power Over Economic Resources'

- The 5 States/UTs with high scores on the 'Power Over Economic Resources' Index in 2006 were Meghalaya, Andaman and Nicobar Islands, Puducherry, Goa, and Mizoram.
- Other States/UTs with scores above the All-India average of 0.319 were Kerala, NCT Delhi, Daman & Diu, Andhra Pradesh, Tamil Nadu, Lakshadweep, Dadra & Nagar Haveli, Karnataka, Maharashtra, Nagaland, Arunachal Pradesh, Manipur and Haryana.

- Kerala, Goa, Andaman & Nicobar Islands, Puducherry, Tamil Nadu and Mizoram had the highest scores on 'Power over Economic Resources' in 1996.

It may be noted that no women were elected to 11th Lok Sabha (1996) from Arunachal Pradesh, Goa, Himachal Pradesh, Jammu & Kashmir, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tamil Nadu, Tripura, Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep and Puducherry. In 1996, no women were elected to the Legislature in Manipur, Mizoram and Nagaland.

There was no data for Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, and Lakshadweep for this indicator in 1996 and 2006. As explained earlier, wherever data was not available, the Dimension score was determined by dividing the total score for the remaining indicators by the number of indicators for which data was available.

Correcting Gender Disparities in Empowerment: Issues and Challenges

The 73rd and 74th Constitutional Amendments led to the reservation for women of one-third seats in *Panchayati Raj* Institutions/Urban Local Bodies. Therefore, policy-based affirmative action or positive discrimination has tried to empower women by ensuring their participation in decision-making in democratic institutions at the local level.³² The impact of affirmative action is clear from Tables 5.5 and 5.6. Table 5.5 shows the huge gap between the percentage of seats held by women in Parliament and in the *Gram Panchayats*. Women hold only 8.3 percent seats in Parliament compared with 36.75 percent seats in the *Gram Panchayats*.

Himachal Pradesh has the highest representation of women in Parliament with women holding 25 percent of seats. This is followed by Jammu and Kashmir with 17 percent, Punjab with 15 percent and Delhi with 14 percent. Only four other States have more than 10 percent of seats in Parliament held by women. There are no women representing the States/UTs of Arunachal Pradesh, Assam, Goa, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Uttarakhand, Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep and Puducherry in Parliament.

In sharp contrast, women hold 33.33 percent seats in the *Gram Panchayats* in virtually all States/UTs. 51.28 percent of seats in the *Gram Panchayats* in Manipur, 47 percent in Bihar and 43 percent in Karnataka are held by women. Additionally, in 17 States, women hold between 35 and 40 percent of seats in the *Gram Panchayats*. Data gaps exist for *Gram Panchayats* in Meghalaya, Mizoram and Nagaland as they have traditional Councils; Jammu & Kashmir has not adopted the 73rd Constitutional Amendment Act, 1992; elections to the Rural Local Bodies have not been conducted so far in Jharkhand and in Delhi, the Panchayati Raj system is yet to be revived.

Affirmative action through the 73rd Constitutional Amendment has resulted in higher representation of women in *Gram Panchayats* and *Zilla Parishads*, which in turn has led to higher values for Dimension 1, i.e., 'Political Participation and Decision-making Power'. The impact of this on GEM scores for 2006 can be seen in Table 5.6 by comparing column 3 with column 4 and for 1996 by comparing column 5 with column 6. Given the share of population living in rural India, the importance of the 73rd Amendment in empowering women through strengthening their participation in decision-making at all levels cannot be over-emphasised.

³² Aasha Kapur Mehta (1996), op. cit.

Table 5.5: Empowering Women through Affirmative Action: Percent Seats Held by Women in Parliament and in the *Gram Panchayats* in 2006

State/UT	Percent Seats Held by Women in	
	Parliament	<i>Gram Panchayats</i>
Andhra Pradesh	7.1	35.74
Arunachal Pradesh	0.0	34.54
Assam	0.0	39.20
Bihar	7.5	46.68
Goa	0.0	34.00
Gujarat	3.8	33.33
Haryana	10.0	36.65
Himachal Pradesh	25.0	39.13
Jammu & Kashmir	16.7	*
Karnataka	7.1	43.33
Kerala	10.0	35.32
Madhya Pradesh	6.9	34.56
Maharashtra	10.4	33.33
Manipur	0.0	51.28
Meghalaya	0.0	*
Mizoram	0.0	*
Nagaland	0.0	*
Orissa	9.5	35.83
Punjab	15.4	35.03
Rajasthan	8.0	35.30
Sikkim	0.0	38.90
Tamil Nadu	10.3	33.69
Tripura	0.0	34.60
Uttar Pradesh	8.8	38.85
West Bengal	9.5	36.63
Chhattisgarh	9.1	33.80
Jharkhand	7.1	*
Uttarakhand	0.0	37.64
Andaman & Nicobar Islands	0.0	34.43
Chandigarh	0.0	32.69
Dadra & Nagar Haveli	0.0	39.47
Daman & Diu	0.0	38.96
NCT Delhi	14.3	*
Lakshadweep	0.0	37.65
Puducherry	0.0	36.14
All India	8.3	36.75

Note: *denotes States/UTs where data is not available as there is no *Gram Panchayat* in that State/UT.

Source: Ministry of Panchayati Raj, 2008.

It needs to be noted that male-female inequality is almost non-existent when measured in terms of the electorate exercising the right to vote in the Lok Sabha elections. A woman's vote matters for the victory or defeat of even male candidates and this too is a reason for women being encouraged to vote. The ideal value for indexed EDEP is 1 and it can be seen that the indexed EDEP is between 0.99 and 1 for 27 States/UTs and above 0.96 for all States. This reflects the fact that since the right to vote is vested in the individual, a woman exercising her right to vote is not "taking anything away" from a man in the process of casting her vote. Hence the outcome for the indicator based on percentage of men and women exercising their right to vote as a proportion of those eligible to vote is equitable. However whether or not the decision regarding the choice of candidate for whom the vote is cast is taken independently by women, needs further investigation.

Women candidates participating in the electoral process as candidates on behalf of national political parties in 2004 Lok Sabha elections exceeded 10 percent in only 8 States/UTs. The highest estimates were for Puducherry (50%), Andaman & Nicobar Islands (20%) and Punjab (17%). While a large number of States/UTs had no women candidates from national parties, Bihar had only 3%, Tamil Nadu 4% and Karnataka 5%.

In the absence of affirmative action or firm commitment by political parties, there will be continued disparity in participation of women in setting the agenda, determining priorities and decisions in the political domain.

The most important sources of disempowerment faced by women are:

- Harassment through violence, both physical and sexual and
- Severe disparities in access to assets such as land and low share of "paid" work and income.

Table 5.6: Impact of Affirmative Action on GEM Scores: Estimates With and Without Representation in the Gram Panchayats and Zilla Parishads in 2006 and 1996

S.No.	State/UT	GEM 2006		GEM 1996	
		(with GP and ZP)	(without GP and ZP)	with GP and ZP)	(without GP and ZP)
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6
1	Andhra Pradesh	0.547	0.501	0.467	0.411
2	Arunachal Pradesh	0.469	0.398	0.307	0.322
3	Assam	0.417	0.357	0.313	0.286
4	Bihar	0.379	0.317	0.278	0.278
5	Goa	0.551	0.478	0.494	0.455
6	Gujarat	0.485	0.432	0.409	0.349
7	Haryana	0.532	0.489	0.455	0.405
8	Himachal Pradesh	0.540	0.499	0.393	0.327
9	Karnataka	0.526	0.462	0.422	0.354
10	Kerala	0.525	0.476	0.486	0.432
11	Madhya Pradesh	0.463	0.414	0.406	0.360
12	Maharashtra	0.516	0.467	0.438	0.381
13	Manipur	0.418	0.341	0.380	0.322
14	Orissa	0.393	0.346	0.329	0.279
15	Punjab	0.514	0.479	0.451	0.404
16	Rajasthan	0.442	0.390	0.403	0.360
17	Sikkim	0.447	0.381	0.300	0.262
18	Tamil Nadu	0.498	0.450	0.459	0.392
19	Tripura	0.382	0.312	0.335	0.277
20	Uttar Pradesh	0.452	0.394	0.334	0.298
21	West Bengal	0.435	0.394	0.350	0.303
22	Chhattisgarh	0.464	0.413	0.407	0.361
23	Uttarakhand	0.466	0.404	0.334	0.298
24	Andaman & Nicobar Islands	0.560	0.512	0.437	0.356
25	Chandigarh	0.500	0.442	0.449	0.389
26	Dadra & Nagar Haveli	0.479	0.394	0.385	0.319
27	Daman & Diu	0.503	0.416	0.413	0.332
28	Lakshadweep	0.463	0.382	0.418	0.337
29	Puducherry	0.558	0.529	0.406	0.406
All India		0.496	0.444	0.416	0.366

Note: GEM estimates are not listed in Table 5.6 for Jammu & Kashmir, Meghalaya, Mizoram, Nagaland, Jharkhand and NCT Delhi as PRI elections were not conducted.

Women face physical, mental, emotional and sexual abuse both within and outside their home. Table 5.7 reflects the high incidence of violence against women in almost all parts of the country but especially in Bihar, Madhya Pradesh, Tripura, Rajasthan, Manipur, Tamil Nadu, West Bengal, Uttar Pradesh, Assam, Orissa and Arunachal Pradesh.

Based on empirical data from Karnataka, Renuka Viswanathan³³ draws attention to “routine domestic violence against women resulting in death that has gone unpunished under the penal code of the country.” She points out that basic flaws in the reporting and monitoring process “have resulted in systematic concealment of horrifying data.” She argues strongly for monitoring all unnatural deaths as they conceal the alarming increase in kitchen accidents despite the availability of statistics in the Crime Record Bureau. She argues that “lives can be saved and criminals punished if statistics is placed at the service of victims of marital violence.”

Estimation of GEM requires the use of data for both men and women. Even though data on dowry deaths, rape, eve teasing and violence against women grossly underestimates the extent to which women face harassment, inclusion of these indicators in an index of empowerment requires the availability of equivalent data for men. In any case, gender empowerment cannot be achieved without actions that ensure that all spaces, both inside and outside the home, are safe for women.

In the context of work, it is well known that women work longer hours than men and participate in the work force to a far greater extent than is measured by the data. Official estimates of work force participation consistently underestimate the work done by women. A plethora of micro studies provide detailed estimates of measurement failure. A few of these are

Table 5.7: Percentage of Women Age 15-49 who Have Experienced Physical or Sexual Violence in India and States, 2005-06

State	Physical or sexual violence
Bihar	55.6
Madhya Pradesh	46.8
Tripura	44.7
Rajasthan	44.6
Manipur	38.9
Tamil Nadu	38.7
West Bengal	38.3
Uttar Pradesh	38.1
Assam	36.5
Orissa	36.2
Arunachal Pradesh	35.5
Jharkhand	34.8
Andhra Pradesh	33.8
Punjab	30.9
Chhattisgarh	30.1
Maharashtra	29.2
Haryana	29
Gujarat	27.8
Uttaranchal	26.8
Mizoram	25.5
Sikkim	20.9
Karnataka	19.9
Nagaland	19
Kerala	17.3
Delhi	16.5
Meghalaya	16
Goa	15
Jammu & Kashmir	12.9
Himachal Pradesh	5.6
India	35.4

Source: NFHS -3

cited below and they show the gross inaccuracies inherent in the official statistics. For instance, based on surveys conducted in the 1970s, Jain and Chand³⁴ found that 20 out of 104 females reported as non-workers in a West Bengal village in the Census, were actually winnowing, threshing, parboiling or

³³ Renuka Viswanathan (2000), Measuring Development, Human Rights and Domestic Violence, International Association for Official Statistics Conference at Montreux (op.cit.)

³⁴ Devaki Jain and Malini Chand, (1982). Report on a Time Allocation Study: Its Methodological Implications, Indian Social Studies Trust, April.

working as domestic servants for 8-10 hours a day. Omvedt³⁵ found 239 women workers in one area where the Census counted 38 and 444 women workers in another area where the Census listed 9. While the 1991 Census gave the Female Work Force Participation Rate for Punjab as 4.4%, National Council of Applied Economic Research, with a probe, got 28.8%.³⁶ Prem Chowdhry³⁷ refers to an inquiry into dairy development in Ambala, which reported no female to be a worker in Animal Husbandry. As even a cursory familiarity with agriculture shows, women are very clearly allied with animal husbandry, from bringing fodder from fields, cutting chaff, preparing food mix for cattle, giving water and feed to bathing and cleaning cattle, cleaning cattle sheds, treating sick cattle, making dung cakes, storing them, making compost, etc. Yet their contribution remained invisible. The NSS 1993-94 household survey³⁸ reports that 29% of rural and 42% of urban women were engaged only in household work and were without work even in the subsidiary status. Subsequently, they noted that 58% of women characterised in this way in rural areas and 14% in urban areas were actually maintaining kitchen gardens, household poultry, collecting fish, collecting firewood, husking paddy, grinding foodgrains, preserving meat, preparing *gur*, making baskets etc. In other words they were engaged in economic activities. NSS calculates the percentage of wrongly classified women as constituting 17% of women in rural and 6% in urban areas. The NSS further states that "an upper limit of women worker

population ratio can approximately be obtained by raising the ratio of women workers by this percentage" but does not take the logical next step and make the correction.³⁹ All the studies referred to above pertain to tasks that are in the realm of "work."

As the Report of the Planning Commission Subgroup on Gender and Agriculture for the Eleventh Plan⁴⁰ notes: "Women today play a pivotal role in agriculture – as female agricultural labour, as farmers, co-farmers, female family labour and (with male out-migration, widowhood, etc) as managers of farms and farm entrepreneurs. Three-fourths of women workers are in agriculture. Women work extensively in production of major grains and millets, in land preparation, seed selection and seedling production, sowing, applying manure, fertilizer and pesticide, weeding, transplanting, threshing, winnowing and harvesting; in livestock production, fish processing, collection of non-timber forest produce (NTFP) etc.... Landless women agricultural labourers play a pivotal role as they are involved in most of the agricultural operations." Further, "53% of all male workers but 75% of all female workers, and 85% of all *rural* female workers, are in agriculture. Women constitute 40% of the agricultural work force and this percentage is rising. An estimated 20 percent of rural households are *de facto* female headed, due to widowhood, desertion, or male out-migration".⁴¹

Additionally, there are a large number of tasks that women do and that entail drudgery but that are not

³⁵ Gail Omvedt (1992). The "Unorganised Sector" and women workers, *Guru Nanak Journal of Sociology*, Vol.13 (I); April 1992; pp 19 -61.

³⁶ Ratna Sudarshan, (1998). Employment of Women, Trends and Characteristics, National Seminar on in Search of New Vistas, Women's Vocational Training Programme, Directorate General of Employment and Training, New Delhi, July 30-31, 1998).

³⁷ Prem Chowdhry (1994). High Participation, Low Evaluation: Women and Work in Rural Haryana, Page No.A-140-141, EPW 1994, Vol. 24.

³⁸ Sarvekshana (1997). A Note on Participation of Indian Women in Household Work and Other Specified Activities, October-December.

³⁹ Aasha Kapur Mehta, (2000), The Invisible Workers: Women's Unrecognised Contribution to the Economy, Manushi, November-December.

⁴⁰ Report of the Planning Commission Subgroup on Gender and Agriculture for the Eleventh Plan 2008.

⁴¹ Agarwal, Bina (2006). Women's economic empowerment and the Draft Approach to the 11th Plan: Comments as Member of the 11th Plan Working Group on Land Relations.

part of “economic” activity. An attempt was made by Mukherjee⁴² to estimate an ‘extended Net Domestic Product (NDP)’ that includes unpaid household services. Even when the agricultural earnings rate is used for evaluation of household work, women’s share in extended NDP for 1980-81 increases from 16 to 36 percent. Use of national average earnings per worker raises the figure to as much as 45 percent. Mukherjee points out that the extended NDP concept helps depict men’s and women’s contribution as reasonable aggregates. Kulshrestha and Singh⁴³ also tried to measure an extended NDP that includes the value of housewives’ services and also estimate the share of women in the extended NDP. They provide two alternate estimates of extended NDP for 1990-91, in which household work is evaluated at 1980-81 prices based on average agricultural earnings and national average earnings per worker. Whereas they calculate the share of women in the usually calculated estimates of NDP at 17 per cent, the contribution of women to the economy increases to 33 per cent when agricultural earnings are used to evaluate unpaid household work and to 44 per cent when national average earnings per worker are used for the computation.

The Ministry of Statistics and Programme Implementation conducted a Time Use Survey in 18,591 households spread over six selected States namely, Haryana, Madhya Pradesh, Gujarat, Orissa, Tamil Nadu and Meghalaya. The Survey found that if System of National Accounts (SNA) and extended SNA activities were taken together, out of 168 hours, the “average time spent by rural males is only 46.05 hours as compared to 56.48 hours by rural females.

The estimate is 44.50 hours for urban males compared to 45.60 hours for urban females. Therefore, women were found to be working for longer hours than males.” Further, the Survey found that no payment was made for about 38% of the time spent in SNA activities. “The amount of unpaid activities was more (51%) for female as compared to only 33% for male. The predominance of females in unpaid activities was visible in all the States. The percentage of time spent by females in unpaid activities was highest in Haryana (86%) followed by Meghalaya (76%) and Orissa (69%). The percentage was lowest for Tamil Nadu (32%).” The report also states that “it was generally found that females spent about double the time as compared to males in activities relating to taking care of children, sick and elderly people.”⁴⁴

As demanded by MWCD, National Commission for Women, and women’s groups, the statistical invisibility of women’s work (both paid and unpaid) must be corrected through preparation of a satellite account that should include, in detail, the work that women undertake. The lack of recognition of the work that women do has an impact on the status of women in society, their opportunities in public life and the gender blindness of development policy.⁴⁵ Further, since access to assets such as land and livestock are among the important means of escaping poverty,⁴⁶ policies and programmes that enable women’s access to productive assets must be given priority.

Women face severe disadvantages as farmers due to lack of access to productive resources, especially land and credit. Access to resources provided through Government programmes and schemes must be registered in the name of both husband and wife.

⁴² Mukherjee, M. (1985) ‘Bread and Roses’, *Journal of Income and Wealth*, July.

⁴³ A.C. Kulshrestha and Gulab Singh, (1996). Domestic Product by Gender in the Framework of 1993 SNA. *Economic and Political Weekly*, Vol. 31, No. 51, December 21, 3330-34.

⁴⁴ Ministry of Statistics and Programme Implementation, Time Use Survey (1998-99)

⁴⁵ UNDP (1995) Human Development Reports, Oxford University Press, New Delhi.

⁴⁶ Bhide Shashanka and Aasha Kapur Mehta, (2004). Correlates of Incidence and Exit from Chronic Poverty in Rural India: Evidence from Panel Data, CPRC-IIPA Working Paper 15, May.

The share of women in earned income is also low because they are paid lower wages on the assumption that women are less productive. Mencher and Sardamoni⁴⁷ point out that this is not based on any fact. “No one has ever measured the amount of paddy harvested by a woman and that harvested by a man. In those parts of Kerala where harvesting is paid by a share of what is harvested, usually 1 to 6, one tends to find a larger proportion of harvesting done by females. Still, we have never heard a complaint from a landowner that women were not good at harvesting, or any claim that males could harvest more in a given period of time”.

Women are excluded from extension services and special efforts must be made to provide strong exten-

sion and technical support to them in the context of agriculture and animal husbandry to enable increase in agricultural productivity and incomes.

Availability of water and of water for daily needs must be given the highest priority as having to walk for miles to fetch water entails drudgery, increases women’s work burden, is disempowering and has an opportunity cost both within and outside the home. Additionally, mandatory availability in a time-bound manner of safe drinking water in each home and safe sewage disposal are urgently needed. Costs in terms of person days lost and drudgery suffered by women justify this.

Data gaps and adjustments made in calculation of HDI, GDI and GEM are presented in Chapter 6.

⁴⁷ Mencher, Joan P. and Sardamoni, K. (1982). Muddy Feet, Dirty Hands. *Economic and Political Weekly, Review of Agriculture*, Vol. 17, No. 52, December 25.

Data Gaps in Estimating HDI, GDI and GEM: Need for Corrective Action

6. Data Gaps in Estimating HDI, GDI and GEM: Need for Corrective Action

While significant progress has been made with regard to collection of gender disaggregated data, several gaps remain and many of these constrained the estimation of GDI and GEM. The data source and specific year for which data was available for each of the indicators used for estimating HDI, GDI and GEM for the two time periods, 1996 and 2006, are listed in Table 6.1.

Data Gaps in Indicators and Adjustments/Assumptions Made in Estimating HDI, GDI and GEM for States/UTs

Important data gaps pertaining to each of the indicators used to calculate HDI, GDI and GEM and the specific adjustments made are listed below.

Life Expectancy at age 1

- Life Expectancy at age 1 (LE1) is available for only 15 major States for the period 1992-96 and for 16 major States for the period 2002-2006. LE1 is not available for both 1996 and 2006 for Jammu & Kashmir, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Goa, Delhi, Chhattisgarh, Jharkhand, Uttarakhand, Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep and Puducherry. Additionally, LE1 is also not available for Himachal Pradesh for 1996.

The following adjustments were made:

- The All-India average value was applied to Jammu & Kashmir.
- The value for Assam was applied to all the North Eastern States, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- The average of the values for Karnataka and Maharashtra were applied to Goa.
- The value for Madhya Pradesh was applied to Chhattisgarh.
- The value for Bihar was applied to Jharkhand.
- The value for Uttar Pradesh was applied to Uttarakhand.
- The All-India average value was applied to the Union Territories, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, and Lakshadweep.
- The average of the values for Punjab and Haryana was applied to Chandigarh.
- The average of the values for Haryana and Uttar Pradesh was applied to Delhi.
- The value for Tamil Nadu was applied to Puducherry.
- The average of the values for Punjab and Haryana was applied to Himachal Pradesh for 1996.

Table 6.1: Indicators and Source of Data used to estimate HDI, GDI and GEM

Indicators	Year for which data used to estimate 1996 Index	Year for which data used to estimate 2006 Index	Data Source
Infant Mortality Rate	1996	2006	SRS, Registrar General of India (RGI)
Life Expectancy at age 1	1992-96	2002-06	SRS, RGI
7+ Literacy Rate	1996	2006	NSSO 52 nd Round (1995-1996) NSSO 62 nd Round (2005-06)
Mean Years of Education for 15+ age group	1993-94	2004-05	NSSO 50 th Round (1993-94) NSSO 61 st Round (2004-05)
WFPR and Wage Rate for Casual Labour	1993-94	2004-05	Computed from NSSO unit records 50 th Round (1993-94) and 61 st Round (2004-05)
NSDP	1995-96	2005-06	CSO data for 1996 and 2006. Spliced for conversion to 1999-2000 base year
Parliamentary Seats (elected)	1996	2004	Election Commission of India
Seats in Legislature (elected)	Varying years closest to 1996	Varying years closest to 2006	Election Commission of India
Seats in <i>Zilla Parishads</i> (elected)	Varying years closest to 1996	Varying years closest to 2006	For 1996: Reviving Democracy: The Emerging Role of Women in Decision Making, A Study of Women's Participation in Governance in South Asia, 2003, Institute of Social Studies, New Delhi For 2006: The State of <i>Panchayats</i> : 2007-08, Ministry of <i>Panchayati Raj</i>
Seats in <i>Gram Panchayats</i> (elected)	Varying years closest to 1996	Varying years closest to 2006	For 1996: Reviving Democracy: The Emerging Role of Women in Decision Making, A Study of Women's Participation in Governance in South Asia, 2003 For 2006: The State of <i>Panchayats</i> : 2007-08
Candidates in Electoral Process in National Parties in Parliamentary Election	1996	2004	Election Commission of India
Electors exercising the right to vote in Parliamentary Election	1996	2004	Election Commission of India
Enrolment in Medical and Engineering Colleges	2004-05	1995-96	Selected Educational Statistics 1995-96 and 2004-05, Min. of Human Resource Development
Number of officials in service in IAS, IPS and Indian Forest Service	1996	2006	(i) Indian Administrative Service, Civil List, Department of Personel and Training, 1996 and 2006 (ii) Indian Police Service, Civil List, Ministry of Home Affairs, 1996 and 2006 (iii) Indian Forest Service, Civil List, Min. of Environment and Forests, 2008
Number of Operational Land Holdings	1995-96	2001	Agriculture Census, 2000-01
Number of Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)	1996	2006	Reserve Bank of India

Infant Mortality Rate

- Data for Infant Mortality Rate (IMR) is not available for the States of Jammu & Kashmir and Mizoram for 1996.

The following adjustments were made:

- The value for Himachal Pradesh was applied to Jammu & Kashmir.
- The average of the values for Assam, Manipur and Tripura was applied to Mizoram.

7+ Literacy Rate

- National Sample Survey (NSS) 7+ Literacy Rate is available from the NSSO 62nd Round (2005-06) for the north eastern States as a group and for union territories as a group and not for each of them individually.
- Data for 7+ Literacy Rate is not available for the year 1996 for the newly formed States, Chhattisgarh, Jharkhand and Uttarakhand.

The following adjustments were made:

- The value of Madhya Pradesh was used for Chhattisgarh.
- The value for Bihar was used for Jharkhand.
- The value for Uttar Pradesh was used for Uttarakhand.
- The value for the group of north eastern States was applied to Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- The value for the group of union territories was applied to Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep and Puducherry.

Mean Years of Education for 15+ age group

- Published data is not available for Mean Years of Education for 15+ age group and the data had to be generated from NSS unit level data.

Net State Domestic Product

- Net State Domestic Product (NSDP) at factor cost at constant 1999-2000 prices was not available for 1996. This had to be estimated by splicing index numbers.
- NSDP at factor cost is not available for Dadra & Nagar Haveli, Daman & Diu and Lakshadweep for 2006.
- Estimates of NSDP are not available for 1996 for Mizoram, Chhattisgarh, Jharkhand, Uttarakhand, Dadra & Nagar Haveli, Daman & Diu and Lakshadweep.

The following adjustments were made to estimate NSDP (and corresponding population estimates):

- The value for Assam was used for Mizoram for 1996.
- The value for Madhya Pradesh was used for Chhattisgarh.
- The value for Bihar was used for Jharkhand.
- The value for Uttar Pradesh was used for Uttarakhand.
- The All-India average NSDP value was used for Dadra & Nagar Haveli, Daman & Diu and Lakshadweep for 1996 and 2006.

Work Force Participation Rate

- Data on work force participation rates is from NSS quinquennial rounds conducted in

1993-94 (used for the 1996 estimates) and 2004-05 (used for the 2006 estimates). Work force participation rates are not available for Chhattisgarh, Jharkhand and Uttarakhand for 1993-94 separately from the parent States.

The following adjustments were made:

- The value for Madhya Pradesh was used for Chhattisgarh.
- The value for Bihar was used for Jharkhand.
- The value for Uttar Pradesh was used for Uttarakhand.

Wage Rate

- Aggregate or average agricultural and non-agricultural wage rates are not available for States and UTs for the years 1996 and 2006.
- Estimates of wage per day for female and male casual labour had to be estimated from NSS quinquennial rounds conducted in 1993-94 (used for the 1996 estimates) and 2004-05 (used for the 2006 estimates).
- Wage rate estimates are not available separately for the newly formed States, Chhattisgarh, Jharkhand, and Uttarakhand for both time points; for Nagaland for 1993-94 and for Chandigarh for 2004-05.

The following adjustments were made:

- Wage rates for Madhya Pradesh were used for Chhattisgarh.
- Wage rates for Bihar were used for Jharkhand.
- Wage rates for Uttar Pradesh were used for Uttarakhand.

- Wage rates for Assam were used for Nagaland for 1993-94.
- The female wage rate for Punjab was used for Chandigarh for 2004-05.

The Data Gaps and Adjustments Made while Calculating GEM

It may be noted that where data was not available for some of the indicators included in, for instance, the Dimension 'Political Participation and Decision-making Power', or 'Economic Participation and Decision-making Power' and 'Operational Holdings' or 'Credit', no adjustments were made. Instead, the Dimension scores were determined by dividing the total score for the indicators for which data was available by the number of indicators for which data was available. However, in the case of the three newly formed States of Chhattisgarh, Jharkhand and Uttarakhand, since data was not available separately for 1996, estimates for the parent States were applied to each of them.

Parliamentary Elections

- For 1996, no data is separately available on performance of men and women candidates in the Parliamentary election for Chhattisgarh, Jharkhand and Uttarakhand, as they were newly formed States.

The following adjustments were made:

- The value for Madhya Pradesh was used for Chhattisgarh.
- The value for Bihar was used for Jharkhand.
- The value for Uttar Pradesh was used for Uttarakhand.

State Legislature

- Elections to State assemblies occurred in different years and not exactly in 2006 and 1996. Therefore data for elections to assemblies was taken for the year(s) closest to 2006 and 1996.
- There is no data for assemblies for Chhattisgarh, Jharkhand and Uttarakhand for 1996 as these were new States.
- Performance of men and women candidates in the State Assemblies is not available for both 1996 and 2006 for Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu and Lakshadweep as there are no legislative assemblies in these Union Territories.

The following adjustments were made:

- The value for Madhya Pradesh was used for Chhattisgarh.
- The value for Bihar was used for Jharkhand.
- The value for Uttar Pradesh was used for Uttarakhand.

Panchayati Raj Institutions

- The States of Meghalaya, Mizoram & Nagaland have traditional Councils. Jammu and Kashmir has not adopted the 73rd Constitutional Amendment Act 1992. In Jharkhand, *Panchayat* elections have not been conducted so far. For the National Capital Territory of Delhi, *Panchayati Raj* Institutions are yet to be revived.
- For 1996, the data is not separately available on performance of men and women candidates in the *Panchayati Raj* election for Chhattisgarh, Jharkhand and Uttarakhand, as they were newly formed States.

- Data for women and men elected to the *Panchayati Raj* Institutions, is not available for Orissa for the election conducted in 2007.

The following adjustments were made:

- Data for 2002 PRI elections was used for Orissa for estimating indices for 2006.
- The value for Madhya Pradesh was used for Chhattisgarh.
- The value for Bihar was used for Jharkhand.
- The value for Uttar Pradesh was used for Uttarakhand.

IAS, IPS and IFS Officers

- For All India Services – Indian Administrative Service (IAS), Indian Police Service (IPS) and Indian Forest Service (IFS), data for men and women is available under one cadre of (i) (AGMUTs) for the States and union territories of Arunachal Pradesh, Goa, Mizoram, Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Delhi, Lakshadweep, and Puducherry, (ii) (AM) for Assam and Meghalaya and (iii) (MT) for States of Manipur and Tripura.

The following adjustments were made:

- The value for AGMUTs cadre was applied to the States and union territories of Arunachal Pradesh, Goa, Mizoram, Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, NCT Delhi, Lakshadweep and Puducherry.
- The value for AM cadre was applied to Assam and Meghalaya.
- The value for MT cadre was applied to Manipur and Tripura.

Enrolment in Medical and Engineering Colleges

- There was no data on this indicator for Meghalaya, Mizoram, Nagaland, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu and Lakshadweep and so this indicator was not considered for calculating the Dimension score for these States/UTs.

Operational Holdings

- Gender disaggregated data on ownership of assets is not available for most assets for India and the States. The exception is Operational Holdings. Data on Number of Operational Holdings is from the Agriculture Census, 1995-96 and 2000-01.
- No Census was conducted in Jharkhand in 2000-01.
- For 1995-96, combined values were provided for Uttar Pradesh and Uttarakhand and similarly for Chhattisgarh and Madhya Pradesh.
- Data pertaining to the States of Bihar and Meghalaya is based on estimates.

The following adjustments were made:

- The combined values provided were used for Madhya Pradesh and Chhattisgarh.
- The combined values provided were used for Uttar Pradesh and Uttarakhand.
- The estimated values provided for Bihar were used for Bihar and Jharkhand.
- Data for 1995-96 was used for computing the indices for 1996, while data for 2000-01 was used for computing indices for 2006.

Credit Accounts

- Sex disaggregated data is not available even for bank accounts in scheduled commercial banks with credit limit below Rs. 2 lakh. Additionally sex disaggregated data for access to credit above

Rs. 2 lakh is not available separately for Chhattisgarh, Jharkhand and Uttarakhand for men and women for 1996.

The following adjustments were made:

- The value for Madhya Pradesh was used for Chhattisgarh.
- The value for Bihar was used for Jharkhand.
- The value for Uttar Pradesh was used for Uttarakhand.

Data Gaps in Estimating HDI, GDI and GEM at the District Level

- Data is not available for Life Expectancy at age 1 at the district level.
- Data on the Infant Mortality Rate (IMR) and Literacy Rate are available only for Census years, 1991 and 2001.
- Compiled and published data on all the other indicators used for calculating HDI, GDI and GEM are not available at the district level.

Data Gaps in Other Desirable Dimensions

- Data collected by the national data procurement machinery on morbidity sharply underestimates morbidity relative to data generated by micro studies.
- Data on workforce participation rate is available but does not accurately capture women's participation in economic activity.
- Data on women's care work needs to be captured and made statistically visible.
- Data on percentage share of women and men in Urban Local Bodies (ULBs) was not published for all the tiers of local governance.

- Information regarding women and men enrolled in management institutes is not compiled and published.
- Information regarding women and men members of trade unions is not available for the States. It is only available at the national level.
- Information regarding women and men in State Planning Boards (SPBs) is not available. Searching each site yields a few names. While some are by position, the name/gender is not discernible.
- Data on women and men Internet users, phone and mobile users is not available.
- Gender disaggregated data for watching television at least once a week, male and female listening to radio at least once a week and reading newspaper at least once a week is only available for 2005-06 from National Family Health Survey (NFHS), that too for 29 States only.
- Data regarding participation in decisions regarding household purchases, child's education, etc. is available from NFHS only for women for 2005-06 at National and State level (29 States only) and not for men for the two time periods.
- NSDP per capita for men and women are not available.

Estimation of HDI, GDI and GEM for the Two Districts, Mahabubnagar (Andhra Pradesh) and Jodhpur (Rajasthan)

An attempt was made to estimate HDI, GDI and GEM in two districts in India on a pilot basis. The purpose was to identify the extent to which data pertaining to the selected indicators is or is not available at the district level. The criterion for selection of districts was

Table 6.2: HDI, GDI and GEM estimates for Mahabubnagar and Jodhpur

	Districts	Partial HDI/GDI
HDI 2001	Mahabubnagar	0.520
HDI 2001	Jodhpur	0.534
GDI 2001	Mahabubnagar	0.505
GDI 2001	Jodhpur	0.511
		GEM
GEM 2006 with representation in Parliament	Mahabubnagar	0.534
GEM 2006 without representation in Parliament	Mahabubnagar	0.574

Note: HDI = Human Development Index; GDI = Gender Development Index; GEM = Gender Empowerment Measure.

that one district should be selected from a State with relatively more advanced and one from a State with relatively less advanced data collection systems. The two States that were selected, based on discussions, were Andhra Pradesh and Rajasthan. The two districts that were selected were Mahabubnagar and Jodhpur respectively. However the estimates could not be computed for 1996 due to data gaps. HDI and GDI were computed for 2001 for both the districts and GEM for 2006 only for Mahabubnagar. GEM for 2006 for Jodhpur could not be calculated as data for indicators of one of the dimensions, i.e. "Economic Participation and Decision Making", are not available/received. The data source and specific year for which data was available for each of the indicators used for estimating HDI, GDI for 2001 for both the districts – Mahabubnagar & Jodhpur – and GEM for 2006 for Mahabubnagar along with the details of available and used data are presented in Statistical Tables for Districts in pages 162 to 166 of the report.

These estimates are at best partial and are not strictly comparable with the estimates computed for India and the States/UTs as explained earlier. The calculated value of HDI, GDI and GEM for the districts of Jodhpur and Mahabubnagar are shown in Table 6.2.

It may be appreciated that the indicator on percent representation in Parliament (elected) for the district with "1" seat in Parliament will take extreme values of 0% or 100% and may distort the Index. As such, GEM 2006 for Mahabubnagar has been calculated in both ways i.e. with representation in Parliament and without representation in Parliament.

The exercise of calculating HDI, GDI and GEM at district level clearly highlights the necessity of strengthening the statistical systems at district and local levels to enable generation of the district and local level statistics comparable with All India and State statistics.

The next chapter, Chapter 7 presents the Conclusions and Way Forward.

Conclusions and the Way Forward

7. Conclusions and the Way Forward

The Report “Gendering Human Development Indices: Recasting the Gender Development Index and Gender Empowerment Measure for India” estimates human and gender development indices for India and the 35 States/UTs within the limitations of data availability. The report compiles and presents HDI, GDI and GEM for India and the States/UTs for two periods of time, 1996 and 2006. The Dimensions used for computing HDI and GDI are, Dimension 1: ‘A Long and Healthy Life’, Dimension 2: ‘Knowledge’ and Dimension 3: ‘A Decent Standard of Living’. The Dimensions used for computing GEM are, Dimension 1: ‘Political Participation & Decision-making Power’, Dimension 2: ‘Economic Participation and Decision-making Power’ and Dimension 3: ‘Power over Economic Resources’.

The HDI, GDI and GEM scores attained by the 35 States/UTs and changes in the scores and ranks over time reflect performance on these indices and the extent to which a State/UT has progressed in translating its growth into a better quality of life for both women and men. Disparities in access to resources and outcomes are penalised and result in lower levels of attainment on GDI and GEM.

The HDI score for India was 0.530 for 1996 and 0.605 for 2006. For 2006, the HDI score was highest for the Union Territory of Chandigarh at 0.784 and lowest for Bihar at 0.507. The GDI score for India was 0.514 for 1996 and 0.590 for 2006. For 2006, the GDI score was highest for the Union

Territory of Chandigarh at 0.763 and lowest for Bihar at 0.479. The GEM score for India was 0.416 for 1996 and 0.497 for 2006. For 2006 the GEM score was highest for NCT Delhi at 0.564 and lowest for Nagaland at 0.289.

Table 7.1 presents the scores and ranks attained by the States/UTs on HDI, GDI and GEM for the year 2006.

Gaps between HDI and GDI reflect the existence of gender disparities in translating development into equitable outcomes. Table 7.1 shows that the gap between HDI and GDI scores at the All-India level was 0.015 in 2006. The States/UTs that had higher gaps between HDI and GDI than the All-India level are, Lakshadweep, NCT Delhi, Tripura, Bihar, Daman & Diu, Jammu & Kashmir, Chandigarh, West Bengal, Uttar Pradesh, Puducherry, Kerala, Jharkhand, Goa and Andaman & Nicobar Islands. The gap between HDI and GDI was however largest for Lakshadweep, NCT Delhi and Tripura.

States/UTs that perform markedly better on GEM (in terms of rank) than on GDI include Andhra Pradesh, Karnataka, Haryana, Madhya Pradesh, Uttar Pradesh and Chhattisgarh.

Despite limitations, scores attained by the States/UTs on the dimensions that comprise HDI, GDI and GEM, reveal gender-based disparities that can meaningfully be used by policy-makers and analysts. For instance, analysis of Tables 4.4 and 4.7 in Chapter 4 shows

Table 7.1: HDI, GDI and GEM Scores and Ranks for States/UTs in 2006

S.No.	States/Union Territories	HDI 2006	Rank	GDI 2006	Rank	GEM 2006	Rank
1	Andhra Pradesh	0.585	28	0.574	27	0.547	5
2	Arunachal Pradesh	0.647	20	0.642	18	0.469	17
3	Assam	0.595	26	0.585	26	0.417	28
4	Bihar	0.507	35	0.479	35	0.379	31
5	Goa	0.764	2	0.747	2	0.551	4
6	Gujarat	0.634	23	0.624	22	0.485	15
7	Haryana	0.643	21	0.632	20	0.532	7
8	Himachal Pradesh	0.667	15	0.664	13	0.540	6
9	Jammu & Kashmir	0.590	27	0.568	28	0.355	33
10	Karnataka	0.622	25	0.611	25	0.526	8
11	Kerala	0.764	2	0.745	3	0.525	9
12	Madhya Pradesh	0.529	33	0.516	33	0.463	21
13	Maharashtra	0.689	11	0.677	10	0.516	10
14	Manipur	0.702	7	0.699	6	0.418	27
15	Meghalaya	0.629	24	0.624	23	0.346	34
16	Mizoram	0.688	12	0.687	9	0.374	32
17	Nagaland	0.700	8	0.697	7	0.289	35
18	Orissa	0.537	32	0.524	32	0.393	29
19	Punjab	0.668	14	0.663	14	0.514	11
20	Rajasthan	0.541	31	0.526	31	0.442	24
21	Sikkim	0.665	17	0.659	15	0.447	23
22	Tamil Nadu	0.666	16	0.655	16	0.498	14
23	Tripura	0.663	18	0.626	21	0.382	30
24	Uttar Pradesh	0.528	34	0.509	34	0.452	22
25	West Bengal	0.642	22	0.622	24	0.435	25
26	Chhattisgarh	0.549	30	0.542	30	0.464	19
27	Jharkhand	0.574	29	0.558	29	0.435	26
28	Uttarakhand	0.652	19	0.647	17	0.466	18
29	Andaman & Nicobar	0.708	6	0.692	8	0.560	2
30	Chandigarh	0.784	1	0.763	1	0.500	13
31	Dadra & Nagar Haveli	0.677	13	0.673	12	0.479	16
32	Daman & Diu	0.700	9	0.677	11	0.503	12
33	NCT Delhi	0.740	4	0.701	5	0.564	1
34	Lakshadweep	0.697	10	0.635	19	0.463	20
35	Puducherry	0.725	5	0.706	4	0.558	3
All India		0.605		0.590		0.497	

that although Andhra Pradesh performs relatively well on HDI and GDI Dimension 1, 'A Long and Healthy Life' and Dimension 3, 'A Decent Standard of Living', achievement on Dimension 2, 'Knowledge' (based on Literacy Rate and Mean Years of Education) is lower than the estimates for States that have a high proportion of their population below the poverty line, such as Madhya Pradesh, Orissa and Uttar Pradesh. Despite improvements over time, gender differentials in education related indicators continue to be high in several States/UTs. Analysis of Table 7.1 shows that although NCT Delhi is ranked 4th on HDI and 5th on GDI in 2006, there is a large gap between the HDI score (0.740) and GDI score (0.701) that shows the existence of gender disparities. The indices draw attention to this and call for corrective action.

Similarly, the low scores attained, nation-wide, on GEM Dimension 3, 'Power over Economic Resources' draw attention to the severe gender disparities that exist with regard to access to resources and assets and the historical discrimination faced by women in access to land, livestock, credit and other productive resources, despite their unpaid and unrecognised contribution to agriculture and farm and non-farm family based economic activities.

This requires special attention as access to resources can enhance opportunities and lead to enhancement of capabilities, thereby lead to higher levels of gender empowerment as well as development. As the Eleventh Plan notes, "international evidence shows that women's access to land or homestead is positively linked to the family's food security, child survival, health, education, and children's exposure to domestic violence. Women with land and house are also at lower risk from spousal violence, have greater bargaining power in the labour market, and are better able to protect themselves and their children from destitution if the father dies from ill health, natural disaster, or HIV/AIDS."⁴⁸

However it is important to reiterate that the scores and ranks achieved are sensitive to the choice of indicators (constrained by available gender disaggregated data), choice of goal posts, weights used, etc.

Maternal mortality is unacceptably high in India at 254 per 100,000 live births on average for 2004-06 with estimates as high as 480 for Assam and 440 for Uttar Pradesh/Uttarakhand. In comparison, MMR estimates are only 10 for Japan and 56 for China. The Eleventh Plan draws attention to the high levels of maternal mortality and points out that these are directly correlated to women's "lack of access to health care facilities", "discriminatory practices that deny women access to good nutrition and care" and deliveries without assistance from any health personnel⁴⁹. Additionally, the Eleventh Plan notes that "inaccessibility of health centres and poverty prevent (women) from getting timely medical aid. Absence of toilets and drinking water adversely impacts their health. NFHS-3 data reveals that only 27.9% households in rural areas and 70% in urban areas have access to piped water. Further, only 25.9% households in rural areas have access to toilets." Together with access to nutritive diets, access to preventive and curative health care, safe drinking water and sanitation within the home, safe disposal of solid waste and hygiene is critical if we are to reduce the levels of mortality and morbidity and reduce drudgery for women. Urgent action is needed if we are to reduce MMR.

Large gaps exist between morbidity data provided by the NSS and data collected through micro-studies. While Life Expectancy at Birth or Age 1 continues to be used to reflect the state of health, this is available for only around half the States/UTs in the country. Therefore, accurate data on a range of health-related indicators such as morbidity are urgently required so that the computed scores for Dimension 1 of HDI and GDI, 'A Long and Healthy Life', are more representative and better able to capture the ground reality.

⁴⁸ Planning Commission (2008), Eleventh Plan 2007-12, Volume 2, Oxford University Press, New Delhi, p. 192.

⁴⁹ Planning Commission (2008), *ibid*, p. 186.

The most serious aspect of gender discrimination that confronts us however, is violence against women, one manifestation of which is the alarmingly low female-male sex ratio. Special cognisance needs to be taken of this problem and actions taken to put a stop to violence against women and the girl child.

The Constitution allows positive discrimination in favour of women. There is one-third reservation for women in PRIs and ULBs. The representation of women in PRIs has increased well beyond the one-third limit in several States and reached an All-India average of 36.75% in 2006. In comparison, representation of women in the 15th Lok Sabha (2009) is only 10.7% and in Rajya Sabha (2009) it is 9.52%. This is extremely low. This clearly shows that affirmative action has resulted in increased representation and participation of women in decision-making at the grassroots level.

Human and gender development indices can be used as tools to re-allocate resources for programmes and schemes designed to correct gender gaps at all levels of governance through monitoring and tracking progress regularly and ensure quality implementation of programmes which provide access to assets and income earning opportunities for women, such as through providing right to work to all citizens; providing access to work at decent wages to enable exit from poverty and thereby reducing gender disparities in work and standard of living; providing access to safe drinking water to reduce the disease burden caused by drinking contaminated water; and provid-

ing access to health facilities and timely access to medical care to reduce gender disparities in morbidity and mortality.

MWCD's Vision Statement is "Ensuring overall survival, development, protection and participation of women and children of the country" and Mission Statement is "Budgeting for Gender Equity". Together with Gender Budgeting, HDI, GDI and GEM are tools that can be used to identify deep-rooted gender-based inequities which demand that corrective policies, programmes and schemes be implemented in order to achieve gender justice and equitable development outcomes.

While only a few indicators can be used for computing an index, for the other gender-based indicators, data must be collected at regular intervals so that it can be used to track and monitor progress and bring about change, which can translate growth into better and more equitable outcomes. Data gaps continue to constrain the construction of appropriate indices especially in the context of access to land, productive assets, credit, income, etc. It is high time that due priority is accorded for bridging the data gaps in gender disaggregated data. The national and State/UT Statistical Systems must be geared up to meet the challenges and should be strengthened accordingly. Based on quality and timely gender disaggregated data and information, it would be possible to measure and understand gender disparities and correct them through plans, policies, programmes and schemes.

Annexures

List of Annexures

- Annexure 1:** Office Memorandum approving Indian Institute of Public Administration (IIPA) as the collaborating National Professional Institution and Prof. Aasha Kapur Mehta as the focal point in IIPA.
- Annexure 2:** Office Memorandum: Constitution of Technical Advisory Committee for the M/o Women and Child Development- UNDP project of 'Preparation of Gender Development Index/Gender Empowerment Measure'
- Annexure 3:** Office Memorandum; Extension of Technical Advisory Committee (TAC) for the M/o Women and Child Development – UNDP project of 'Preparation of Gender Development Index/Gender Empowerment Measure'
- Annexure 4:** First Technical Advisory Committee Workshop: A Report
- Annexure 5:** Second Technical Advisory Committee Workshop: A Report
- Annexure 6:** Third Technical Advisory Committee Workshop: A Report
- Annexure 7:** Technical Note on Computation of Indices - HDI, GDI and GEM

**No. 12-1/2006/Stat
M/o Women and Child Development
Government of India**

**Room No. 001-002, Jeevan Deep Building,
Parliament Street, New Delhi
Ph. 23362945/23362946(f)
Email:sa.wcd@nic.in
5/12/06**

To

Ms.Seeta Prabhu
Head, HDRC
UNDP India
Lodi Estate, PO Box No. 3059
New Delhi-110003

Ref: M/o WCD letter No. 1-20/2006-WD dated 8/11/2006 (communication of the approval of the GOI-UNDP Project 'Promoting Gender Equality').

Madam,

This is to inform you that, for the GOI – UNDP sub project 'Preparation of Gender Development Index/Gender Empowerment Measure', Secretary, M/o Women and Child Development, has duly approved the Indian Institute of Public Administration (IIPA) as the collaborating National Professional Institution. Prof. Aasha Kapur Mehta (Prof. of Economics, IIPA) will be the focal point in IIPA.

Sd/-

5.12.06

**(S. Jeyalakshmi)
Statistical Adviser**

Copy to: JS (Parul Debi Das)/Director (R. Savithri), M/o Women and Child Development for information and records.

**F. no. 12-1/Stat/2006
M/o Women and Child Development
Government of India**

**Room no. 001-002, Jeevan Deep Building,
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15/01/07**

Office Memorandum

Sub: Constitution of Technical Advisory Committee for the M/o Women and Child Development – UNDP project of 'Preparation of Gender Development Index/Gender Empowerment Measure'

M/o Women and Child Development will be undertaking the activity of 'Preparation of Gender Development Index/Gender Empowerment Measure' under the GOI – UNDP project 'Promoting Gender Equality'. The Indian Institute of Public Administration will be functioning as the collaborating National professional institution in this activity. In order to provide technical guidance, a Technical Advisory Committee has been constituted as follows:

A. Chairperson: Smt. S. Jeyalakshmi, Statistical Adviser, M/o WCD

Members:

Government Representatives:

1. Representative of M/o Health and Family Welfare
2. Representative of D/o School Education and Literacy, M/o Human Resource Development
3. Representative of M/o Urban Development
4. Representative of D/o Rural Development
5. Representative of M/o Labour and Employment
6. Representative of Adviser, WCD, Planning Commission
7. JS (Women Development), M/o WCD
8. Economic Adviser, M/o WCD
9. Representative of Social Statistics division, Central Statistical Organisation, M/o Statistics and Programme Implementation
10. Sh. G.C. Manna, Deputy Director General, Survey Design Research Division, NSSO, M/o Statistics and Programme Implementation
11. Representative of Registrar General of India

Experts:

12. Prof. Devaki Jain, Former Director ISST
13. Prof. Indira Hirway, Director and Prof. of Economics, Centre for Development Alternatives, Ahmedabad
14. Prof. Amita Majumdar, Economic Research Unit, ISI, Kolkata
15. Dr. P.N. Mari Bhat, Director, IIPS, Mumbai
16. Prof. K. Seeta Prabhu, Head, HDRC, UNDP

Member Secretary

17. Prof. Aasha Kapur Mehta, Professor of Economics, Indian Institute of Public Administration, New Delhi.

B. Terms of reference of TAC:-

- a) Develop a methodology for computation of GDI/GEM by deciding
 - The list of socio economic and developmental indicators for constituting the basket for computation of GDI and GEM separately.
 - The Base Year i.e. the year from which the index is to be calculated.
 - The weighting diagram for combining the indicators for computation of index.
 - The formula for calculation of index.
- b) Examination and approval of the GDI/GEM prior to its release.

C. This Committee will work for a period of one year.

D. Out station members invited for the TAC meetings/workshops etc will be entitled to Travel Allowance and Dearness Subsistence allowance as per UNDP norms. For local participants, expenditure on conveyance to and fro will be reimbursed as per UNDP norms.

Sd/-
(Sunitha Bhaskar)
Deputy Director

Distribution:

1. All Members
2. Director General, CSO, M/o Statistics and Programme Implementation
3. JS & FA, M/o Women and Child Development
4. Dir. (WW), M/o Women and Child Development
5. Ms. Meenakshi Kathel, Research Associate, HDRC (Gender), UNDP

**F. no. 12-1/Stat/2006
M/o Women and Child Development
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E mail: sa.wcd@nic.in
14/02/08**

Office Memorandum

Sub: Extension of Technical Advisory Committee (TAC) for the M/o Women and Child Development – UNDP project of 'Preparation of Gender Development Index/Gender Empowerment Measure'

In continuation of this office OM dated 15/1/07, this is to inform that, the tenure of the Technical Advisory Committee Constituted for providing technical guidance for the M/o Women and Child Development- UNDP project of 'Preparation of Gender Development Index/Gender Empowerment Measure' is extended till 31st December 2008. Terms of Reference of TAC will remain same as in the OM dated 15/1/07. In the composition of the TAC, in place of Prof. Mari Bhatt, Director, IIPS, Mumbai, who has since expired, the Director IIPS, Mumbai is included; to that extent the composition of TAC has undergone slight change and the revised TAC is as given below:

A. Chairperson: Smt. S. Jeyalakshmi, Statistical Adviser, M/o WCD

Members:

Government Representatives:

1. Representative of M/o Health and Family Welfare
2. Representative of D/o School Education and Literacy, M/o Human Resource Development
3. Representative of M/o Urban Development
4. Representative of D/o Rural Development
5. Representative of M/o Labour and Employment
6. Representative of Sr. Adviser, WCD, Planning Commission
7. JS (Women Development), M/o WCD
8. Economic Adviser, M/o WCD
9. Representative of Social Statistics Division, Central Statistical Organisation, M/o Statistics and Programme Implementation
10. Sh. G.C. Manna, Deputy Director General, Survey Design Research Division, NSSO, M/o Statistics and Programme Implementation
11. Representative of Registrar General of India

Experts:

12. Prof. Devaki Jain, Former Director ISST
13. Prof. Indira Hirway, Director and Prof. of Economics, Centre for Development Alternatives, Ahmedabad
14. Prof. Amita Majumdar, Economic Research Unit, ISI, Kolkata
15. Director, IIPS, Mumbai
16. Prof. K. Seeta Prabhu, Head, HDRC, UNDP

Member Secretary

17. Prof. Aasha Kapur Mehta, Professor of Economics, Indian Institute of Public Administration, New Delhi.

Out station members invited for the TAC meetings/workshops etc. will be entitled to Travel Allowance and Dearness Subsistence allowance as per UNDP norms. For local participants, expenditure on conveyance to and fro will be reimbursed as per UNDP norms.

Sd/-
(Sunitha Bhaskar)
Joint Director

All TAC members as per list

MWCD-UNDP-IIPA Project for Preparation of Gender Development Index/ Gender Empowerment Measure

First Technical Advisory Committee Workshop: A Report

Background and Purpose

The Ministry of Women and Child Development **constituted a Technical Advisory Committee (TAC) for the GDI/GEM project** (vide OM F. no. 12-1/Stat/2006 dated 15.1.07). A workshop **for TAC members was held on 16th March, 2007** at Conference Hall, First Floor, IIPA, Indraprastha Estate, Ring Road, New Delhi 110002. The purpose of the workshop was to:

- i) Appraise the TAC members of the purpose of the project
- ii) Review and critique the existing practice (indicators, methodology, etc) in compiling GDI/GEM
- iii) Identify the indicators that should be used for compiling GDI and GEM in India.
- iv) Determine data availability for these indicators
- v) Identify suitable methodology for compilation of GDI/GEM for India and States/UTs.

The workshop was attended by the following TAC members:

1. Ms. S. Jeyalakshmi, Statistical Adviser, M/o WCD - Chairperson
2. Dr. P.N. Mari Bhat, Director, International Institute of Population Sciences, Mumbai
3. Sh. G.C. Manna, Deputy Director General, Survey Design Research Division, NSSO, M/o Statistics and Programme Implementation, Kolkata
4. Sh. Srikara Naik, Director (WCD), Planning Commission, Yojana Bhawan
5. Sh. S. Chakrabarti, Director, Social Statistics Division, Central Statistical Organisation, M/o Statistics and Programme Implementation
6. Dr. Ranjana Gupta, Director UNDP, M/o of Rural Development
7. Sh. Pravin Srivastava, Director (Stat), M/o Health and Family Welfare
8. Smt. Suman Prasher, Joint Director, O/o Registrar General of India
9. Ms. Kalpana Narain, Dy. Secretary, M/o Urban Development
10. Prof. Amita Majumdar, Professor, Economic Research Unit, ISI, Kolkata
11. Prof. Indira Hirway, Director and Prof. of Economics, Centre for Development Alternatives, Ahmedabad
12. Prof. K. Seeta Prabhu, Head, HDRC, UNDP
13. Prof. Aasha Kapur Mehta, Professor of Economics, IIPA, New Delhi Member Secretary

The following members could not attend the meeting:

Ms. Parul Debi Das, JS (Women Development), M/o WCD

Representative of D/o School Education and Literacy, M/o Human Resource Development

Mrs. Manjula Krishnan, Economic Adviser, M/o WCD

Prof. Devaki Jain, C/o Singamma Sreenivasan Foundation, Tharanga, 10th Cross Raj Mahal Villas Extension, Bangalore-560080

Representative of Secretary, M/o Labour and Employment

Shri K.D. Maiti, Director, M/o Health and Family Welfare

Also present at the meeting were Sh. R.V.P. Singh, RO, WCD, Planning, Ms. Sunitha Bhaskar, Dy. Director, MWCD, Ms. Brotati Biswas, Research Officer, GDI Project, IIPA and Ms. Anjali Rani, Project Associate.

The list of members and officials who attended the workshop is enclosed as Annexure-I, with relevant contact details.

Ms. S. Jeyalakshmi, Chairperson, TAC, presided over the workshop and apprised the TAC members about the GDI/GEM project initiated by Ministry of Women and Child Development (MWCD) in collaboration with United Nations Development Program (UNDP). The Indian Institute of Public Administration (IIPA), New Delhi is the collaborating National Professional Institution for the implementation of the GDI/GEM project. Prof Aasha Kapur Mehta is the focal point in IIPA and is the Member Secretary of the Technical Advisory Committee. This project is planned in two phases:

Phase I (first six months):

Constitution of TAC

Initial groundwork for the project

Organization of the TAC workshop

Finalization of the indicators and methodology

Phase II (next six months):

Collection of data for India and the States

Estimation of GDI and GEM and

Preparation of report

The Chairperson asked TAC members to review the existing indicators which are used for the compilation of GDI and GEM and determine whether they are best suited for the Indian situation, as also the goal posts to be used, and weightage to be given to the different indicators. She also pointed out that only those indicators could be selected for which data was available separately for males and females.

Since the gender development indicator is basically adjusted human development indicator for gender neutrality, she stressed that it would be better to call it gender related development indicator. The Committee

should take a view on whether it was feasible to calculate HDI separately for males and females and then compare the two, instead of the single Gender related Development Index.

Outlining the genesis of the project **Prof. K. Seeta Prabhu** said that in 1995, soon after the global UNDP Report published (for the first time) the Gender related Development Index and Gender Empowerment Measure, a group of economists under the leadership of Prof. Devaki Jain undertook an in-depth analysis of these indices, critiqued them and tried to identify ways in which they could better reflect the Indian situation. The workshop was organized by Singamma Srinivasan Foundation at Bangalore in 1996, and the papers presented at that workshop were published in The Economic and Political Weekly in October 1996. Efforts were also made to try to extend it to the district level with the support of the Department of Women and Child Development. Four of the Technical Advisory Committee members were part of the group that conducted the research a decade ago. However, the initiative could not progress much because of absence of a project that could facilitate systematic collaboration based on the necessary institutional and financial support required to sustain it. A decade later, there is support from MWCD and UNDP and with the institutional support of IIPA and the Technical Advisory Committee, this initiative is being taken forward and will build on the ground work that has already been done.

A decade ago the indicators were critiqued because it was felt that these had been developed from a northern perspective, and did not incorporate the perspective of the south. For instance, work participation rate was considered to be an unqualified “good”, whereas it was argued that women in the south who are poor do not have a choice regarding work participation. They work out of necessity, so participating in the work force alone cannot be empowering in that sense and cannot be taken as an indicator.

While a fresh look needs to be taken at the indicators for discussing modifications, amendments and whether or not it should be a monitoring tool, the indicators should not be changed so completely that these no longer relate to anything that is being done elsewhere in the world. For instance, the GDI and GEM use primarily outcome indicators. The National Human Development Report of the Planning Commission substituted monitorable indicators for outcome indicators in order to use it as a tool for monitoring. This also takes care of the issue of non-availability of data. This is a new dimension that has come in during these ten years.

After the Technical Advisory Committee decides on a course of action, before dimensions and methodology are finalized, these may be presented at a stakeholder workshop for larger ratification.

She also mentioned that Planning Commission and UNDP are working on State Plans and ‘Strengthening State Statistical Systems for District Level Data’ is an active component of this. Recommendations made by the TAC with regard to the list of indicators for which data should be compiled systematically at the district level can be taken to the State Directorate of Economics and Statistics. This will ensure that gender concerns are built into the district level data system.

Prof. Aasha Kapur Mehta made a brief presentation based on a concept paper prepared for the workshop. She briefly:

- Outlined UNDP's HDI, GDI and GEM and the methodology used to estimate them;
- Outlined the background to the 1996 workshop at Bangalore on GDI and GEM,
- Outlined the recommendations made by the workshop for refining GDI and GEM and making them more relevant to India,
- Listed the six papers prepared by the Indian economists that were published in the October 26, 1996 Special Issue of *Economic and Political Weekly*;
- Listed the 18 indicators that were retrieved from UNDP's institutional memory (on which data should be collected at the State and district level with regular periodicity) identified at brainstorming workshops organized by the DWCD, UNDP and Ministry of Statistics and Programme Implementation;
- Compared the Planning Commission NHDR Gender Equality Index and HDI/GDI.

She noted that the GDI and GEM had been reviewed and critiqued both nationally and internationally. The issues raised in the context of GDI included its misinterpretation as a measure of gender inequality; complexity; problems in the calculation of gender gaps in income; the assumption that gender differences in earned incomes are a good indicator of gender differences in access to nutrition, housing, clothing; data availability and reliability; inability to capture subtle gender inequalities (educational choices, quality of education, access to employment and training, promotion); over-emphasis on income; narrow selection of variables; and omission of variables such as poverty, income and asset inequality, patriarchy, caste and ethnicity crucial for the development of women in developing countries; inability to capture intra-household disparities, differences in ownership of assets and nutritional status.

In the context of GEM it was pointed out that while it was conceptually clearer and more easily interpreted, relevant at the country level and could be disaggregated to the sub-national level, its shortcomings include the complicated calculation of gender gaps; poor availability of data; and the fact that it did not consider empowerment in the personal, household and community domains. GEM should reflect the existing power structures and monitor the efforts made in improving these structures; it needed to capture political participation at local and grassroots levels. It should be a prescriptive tool for change. Indicators such as literacy, access to contraceptives, exercise of right to vote, existence of collective structures and access to resources like land, credit, participation in cooperatives and self-help groups should be included.

Issues Discussed by the Technical Advisory Committee Members

- i) Should outcome indicators or process indicators be used in compiling the indicators?
- ii) It was strongly argued that the index compiled should be simple, easily calculable and easy to interpret. The indicators should be such that they can be understood by the common people easily.

- iii) Attention was drawn to the issue of the spatial dimension for which GDI and GEM should be estimated, i.e., National and State level, or whether districts should also be attempted. It was agreed that the task would be limited to estimating GDI and GEM at the National and State level at present. The exercise can be attempted for two districts to identify data gaps that can then be flagged to States for data collection so that GDI and GEM can be extended to districts in a subsequent exercise.
- iv) A suggestion was made that while the indices should definitely include health, education, etc., they should additionally try to capture macro indicators, such as environmental degradation, pollution and depletion; basic infrastructure and basic services at the State level; structural inequalities; wage disparities; conflict, disaster, security and safety; patriarchy; unequal sharing of unpaid work by men and women, housing and unemployment.

However it was argued that many of these variables should not be included while estimating GDI and GEM for the following reasons:

- a. The need to keep the index simple and easy to interpret. Whatever indicators are compiled should be simple so that we can take them to the common man.
- b. Only those variables can be included for which data is available separately for males and females. For example, if we consider infant mortality rate for male child and female child and total IMR, the comparative picture emerges.
- c. Infrastructure and environmental degradation cannot be measured separately or disaggregated for males and females. The concern is with disparities and comparisons.
- d. Micro details like whether households have separate bedrooms, or big kitchen or small kitchen, or some abstract areas like the environmental degradation, etc. may not be included in trying to measure gender empowerment or calculate gender development indices.
- e. A core minimum set of variables should be identified and based on this the indicators can be compiled
- v) It was generally opined that for computation of GDI and GEM, the UNDP framework of three dimensions, health, education and standard of living may be used to avoid controversies that will be created. The existing framework used by UNDP with regard to the three dimensions should be kept intact. UNDP is already calculating GDI and GEM for India in their country-wise table. Comparisons among countries will not be possible if a different methodology is used.
- vi) Even if it is decided to use the UNDP three dimension framework, indicators that are more relevant in the Indian context may be used. However, it is important that the indicators chosen for the different dimensions can be combined meaningfully. For instance, for the health dimension, it may be possible to combine infant mortality rate and child mortality rate. But if one tries to combine enrolment rate in school with the percent of female teachers that will not be a meaningful composite indicator, as the latter is used in the Empowerment Paradigm.
- vii) Since different countries are preparing these indices, in order to maintain international comparability, while one must have national indicators, they must conform to international practice.

- viii) Issues of scaling were raised and it was suggested that ideal (and different) goal posts for males and females should be used.
- ix) There are lots of indicators which capture the importance of providing an enabling environment for women. Lack of access to toilets for example, concerns women because, in the absence of these facilities, they wait for dusk or dark. It was therefore suggested that a few selected indicators of various dimensions be chosen, which can be monitored separately along with the GDI and GEM. These indicators could be tracked in a parallel exercise, with reasonable frequency with the purpose of evaluating social equity.
- x) The methodology of giving weightage to different indicators needed careful selection.
- xi) Choice of indicators would also depend on availability and periodicity of data for the reference period. If the Report is to be brought out in late 2007 then it may be possible to use data for 2004-05 or later year(s) as available.
- xii) It was suggested that gender inequality could be estimated on the basis of a simple measure of disparity:
$$\frac{\text{Female Value} - \text{Male Value}}{\text{Female Value}}$$
- xiii) Another suggestion was that the 'Data Integration Techniques' explained by Prof. Bikas K. Sinha, Member, National Statistical Commission, be used as an alternative methodology for combining indicators to form an index using squared distance from ideal and anti-ideal values of the indicators.
- xiv) One of the alternatives suggested (also suggested in the UNDP review) is that the human development index be calculated separately for males and females and then compared.
- xv) It was suggested that the collection of data for indicators that are needed but for which data is not presently available be recommended.

The following decisions were taken:

- ❖ Five categories of indices would be attempted at the national level.
 - a. Gender Development Index and Gender Empowerment Measure
 - b. Development Index for males and females separately.
 - c. Empowerment Measure for males and females separately.
 - d. Monitoring or Tracking Indicators to identify certain processes like infrastructure development, housing etc.
 - e. Inequality indicators estimated by Gender Gap Index =
$$\frac{\text{Male Value} - \text{Female Value}}{\text{Male Value}}$$

with a value of 0 indicating no disparity, and a value of 1 indicating maximum disparity.

- ❖ There would be a short-term goal (Phase 1 and 2) and a long-term goal (beyond Phase 2). The current project is confined to dealing with the short-term goal of calculating GDI/GEM at the national level and for the major Indian States. While this exercise would be confined to the national and state level based on available indicators, an attempt would be made to extend it to one or two districts in order to be able to recommend the absolute minimum list of indicators on which data must be collected and be available at the district level.
- ❖ In the long term, compiling GDI/GEM for all districts of India can be considered.
- ❖ The project may recommend the desirable indicators for calculating GDI/GEM at national, state and district levels and identify data gaps.
- ❖ Only those indicators should be included for which data is available separately for males and females so that gender differentials are captured (male/female differences). The indicators used by Planning Commissions (for GEI) will also be considered while finalising the indicators identified for compiling GDI and GEM.
- ❖ The dimensions used could be the same as used by UNDP but the indicators to measure these dimensions could be different, weightage to the indicators and the goal posts could differ from those used by UNDP so as to reflect Indian conditions.
- ❖ When the report is prepared, a section could be included to identify the critical gaps in data in respect of GDI, GEM
- ❖ A tentative list of over 100 indicators was prepared as part of the Concept Note and placed before the Technical Advisory Committee to facilitate identification of the indicators that could be considered in the compilation of GDI, GEM and Tracking Indicators. The tentative list of 50 indicators that could be considered is at **Appendix 4.2**. This list needs to be carefully seen by all TAC members and additions, deletions, modifications may be suggested. It may be ensured by TAC members, especially those from concerned data producing agencies, that for indicators at Annexure-II, sex-wise data is available and the source, levels and periodicity of data availability is checked and corrected.
- ❖ The Central Statistical Organisation (SSD Division) will be collaborating with M/o WCD in this project of national importance.
- ❖ The Chairperson and the Member Secretary were requested to
 - i) Use the discussions at the TAC workshop as the basis for finalising and circulating an initial list of indicators that could be used for (a) compiling GDI and GEM and (b) for tracking
 - ii) Identify if any of the indicators in the list of 18 indicators (**Appendix 4.3**) were not included in the list that has been prepared for consideration of GDI and GEM calculation and tracking. This has been done and is at column 2 in the table at **Appendix 4.3**.

The workshop ended with vote of thanks to the Chair.

**List of TAC Members and Officials Who Attended
the Workshop on 16th March 2007**

S.No	Name & Address	S.No	Name & Address
1	Smt. S. Jeyalakshmi, Chairperson, TAC, Statistical Adviser, M/o Women and Child Development, Room No. 001-002, Jeevan Deep Building, Parliament Street, New Delhi - 110001	8	Ms. Kalpana Narain, Deputy Secretary, Ministry of Urban Affairs, Nirman Bhavan, New Delhi - 110011
2	Prof. Mari Bhat, Director, International Institute of Population Sciences, Govindi Station Road Deonar, Mumbai - 400088	9	Shri Sirkara Naik, Director (WCD), Room No 229 A, Yojana Bhavan, Sansad Marg, New Delhi - 110001
3	Shri S. Chakrabarti, Director SSD (CSO), MOSPI, West Block-VIII, RK Puram, New Delhi	10	Dr. K. Seeta Prabhu, HDRC, UNDP India, Lodi Estate, New Delhi - 110003
4	Dr. Ranjana Gupta, Director (IC/UNDP), Ministry of Rural Development, Krishi Bhawan, New Delhi	11	Ms. Suman Prashar, JDCO, Registrar General & Census Commissioner India, 2 A Mansingh Road, New Delhi - 110011
5	Prof. Indira Hirway, CFDA E-71, Akash, Near Chief Justice Bungalow, Bodakdev, Ahmedabad - 380054	12	Shri P. Srivastava, Director, Ministry of Health & Family Welfare, Nirman Bhawan, New Delhi - 110011
6	Prof. Amita Majumdar, Economic Research Unit, Indian Statistical Institute, 203, BT Road, Kolkata - 700108	13	Prof. Aasha Kapur Mehta, Member Secretary, TAC, Professor of Economics, Indian Institute of Public Administration, Indraprastha Estate, Ring Road, New Delhi - 110002
7	Shri G.C. Manna, DDG, SDRD, NSSO, 164, G.L.T. Road, Kolkata - 700108		

Tentative List of Indicators Identified for Calculation of GDI/GEM

S. No.	Indicators	Source
1. Education		
1.1 Indicators for GDI/GEM		
1.1.1	Total, male and female literacy rate.	(i) Selected Educational Statistics Report (2004-05), Ministry of Human Resource Development. (ii) Census: Primary Census Abstract, Table A-5, 2001. (iii) NSS: Report No 517: Status of Educational and Vocational Training in India, NSS 61 st Round (2004-05).
1.1.2	Gross Enrolment Rate (Primary) M/F.	(i) Selected Educational Statistics Report (2004-05), Ministry of Human Resource Development. (ii) Census: Educational Level by Age and Sex, Table C-8, 2001.
1.1.3	Gross Enrolment Rate (Secondary) M/F.	(i) Selected Educational Statistics Report (2004-05), Ministry of Human Resource Development. (ii) Census: Educational Level by Age and Sex, Table C-8, 2001.
1.1.4	Gross Enrolment Rate (Tertiary) M/F.	(i) Selected Educational Statistics Report (2004-05), Ministry of Human Resource Development. (ii) Census: Educational Level by Age and Sex, Table C-8, 2001.
1.1.5	Drop Out Rate (Primary) (I – V) M/F.	(i) Selected Educational Statistics Report (2004-05), Ministry of Human Resource Development. (ii) NSS: 439: Attending an Educational Institution in India: Its Level, Nature and Cost, NSS 52 nd Round (1995-96).
1.1.6	Drop Out Rate (Secondary) (I – X) M/F.	(i) Selected Educational Statistics Report (2004-05), Ministry of Human Resource Development. (ii) NSS: 439: Attending an Educational Institution in India: Its Level, Nature and Cost, NSS 52 nd Round (1995-96).
1.1.7	Percentage of students appearing for the 10 th Class Board Exam M/F.	(i) Census: Population Attending Educational Institution by completed educational level, Age & Sex Table C-11, 2001.
1.2 Tracking Indicators		
1.2.1	Percent of female teachers to total teachers.	(i) Census: Table C-10, 2001.
1.2.2	Skills, vocational education and training M/F.	(i) Census: Table C-10, 2001.
2. Employment		
2.1 Indicators for GDI/GEM		
2.1.1	Labour force participation rate M/F.	(i) Census: Primary Census Abstract, Table A-5, 2001. (ii) NSS: Report No 516; Employment and Unemployment Situation among Social Groups in India, NSS 61 st Round (2004-05).
2.1.2	Work force participation rate M/F.	(i) NSS: Report No 516; Employment and Unemployment Situation among Social Groups in India, NSS 61 st Round (2004-05).
2.1.3	Wage rate in agriculture and non-agriculture. M/F.	(i) Wage rate in Rural India, Labour Bureau, Ministry of Labour and Employment (2003-04).
2.1.4	Percent of men and women who are regular salary or wage earners.	(i) NSS: Report No 516; Employment and Unemployment Situation among Social Groups in India, NSS 61 st Round (2004-05).

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S. No.	Indicators	Source
2.1.5	Incidence of unemployment M/F.	(i) Census: Primary Census Abstract, Table A-5, 2001. (ii) NSS: Report No 516; Employment and Unemployment Situation among Social Groups in India, NSS 61 st Round (2004-05).
2.1.6	Percent of agricultural labourers who are Main workers in agriculture M/F.	(i) Census: Primary Census Abstract, Table A-5, 2001.
2.1.7	Percent of agricultural labourers who are Marginal workers in agriculture M/F.	(i) Census: Primary Census Abstract, Table A-5, 2001.
2.1.8	Share of women in wage employment in non-agricultural sector.	i) Wage rate in Rural India, Labour Bureau, Ministry of Labour and Employment (2003-04).
2.2 Tracking Indicators		
2.2.1	Time spent on Care, Unpaid work M/F.	(i) NSS: Report No 518: Participation of Women in Specific Activities With Domestic Duties, NSS 61 st Round (2004-05).
2.2.2	Access to two square meals a day/hunger.	(i) NSS Report No 512: Perceived Adequacy of Food Consumption in Indian Households, NSS 61 st Round (2004-05).
3. Assets and Control over Use of Income and Assets		
3.1 Tracking Indicators		
3.1.1	Involvement of women in major household decisions e.g. sale of assets, no. of children, etc.	(i) National Family Health Survey II 1998-99.
4. Health		
4.1 Indicators for GDI/ GEM		
4.1.1	Total, male and female life expectancy at birth.	(i) Sample Registration System Bulletin 2001, Office of RGI. (ii) National Family Health Survey II 1998-99.
4.1.2	Under Five Mortality Rate M/F.	(i) Sample Registration System Report No 2 of 2005, Office of RGI. (ii) National Family Health Survey II 1998-99.
4.1.3	Child Mortality Rate M/F.	(i) Sample Registration System Report No 2 of 2005, Office of RGI. (ii) National Family Health Survey II 1998-99.
4.1.4	Infant Mortality Rate M/F.	(i) Sample Registration System Report No 2 of 2005, Office of RGI. (ii) National Family Health Survey II 1998-99.
4.1.5	Morbidity Rate M/F.	(i) Sample Registration System Report No 2 of 2005, Office of RGI. (ii) National Family Health Survey II 1998-99.
4.2 Tracking Indicators		
4.2.1	Incidence of Anaemia in women.	(i) National Family Health Survey II 1998-99.
4.2.2	Maternal Mortality Rate.	(i) "Maternal Mortality in India (1997-2003), Trend, Causes & Risk Factors" Sample Registration System, Office of RGI.
4.2.3	Births attended by trained personnel.	(i) National Family Health Survey II 1998-99.

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S. No.	Indicators	Source
4.2.4	Percent of men marrying at the age of 21 and above and women at the age of 18 and above.	(i) Census: Marital Status by Age Sex, Table C-2, 2001. (ii) NSS Report No 445; Maternal and Child Health Care in India, NSS 52 nd Round 1995-96.
5. Participation in the Political and Administrative Domain		
5.1 Indicators for GDI/GEM		
5.1.1	Percentage of IAS and Allied Civil Servants M/F.	(i) Ministry of Personnel and Public Grievances.
5.1.2	Percent of seats in Parliament held M/F.	(i) Lok Sabha and Rajya Sabha Secretariat.
5.1.3	Percentage of men and women elected in State Assemblies M/F.	(i) Secretary Election Commission of India.
5.1.4	Proportion of men and women electors casting their votes.	(i) Secretary Election Commission of India, General Elections 2004.
5.1.5	Percent of men and women elected representatives at Panchayat level.	(i) Ministry of Panchayati Raj.
6 Demographic Indicators		
6.1 Tracking Indicators		
6.1.1	Sex ratio.	(i) Census: Primary Census Abstract, Table A-5, 2001.
6.1.2	Child sex ratio (0-6)	(i) Census: Primary Census Abstract, Table A-5, 2001.
7. Social Indicators and Violence		
7.1 Tracking Indicators		
7.1.1	Total incidence of Crimes against Women.	(i) National Crime Records Bureau, Ministry of Home Affairs 2004.
7.1.2	Crimes against Women as a proportion of crimes registered under IPC	(i) National Crime Records Bureau, Ministry of Home Affairs 2004.
7.1.3	Incidence of Dowry Deaths.	(i) National Crime Records Bureau, Ministry of Home Affairs 2004.
7.1.4	Number of Accidental or Unnatural Deaths M/F.	(i) National Crime Records Bureau, Ministry of Home Affairs 2004.
8. Basic Amenities and Relative Impact on Drudgery		
8.1 Tracking Indicators		
8.1.1	Percent of households with access to safe drinking water.	(i) Census: Housing tables, Census of India 2001.
8.1.2	Percent of households with access to toilets.	(i) Census: Housing tables, Census of India 2001.
8.1.3	Percent of households with access to electricity	(i) Census: Housing tables, Census of India 2001.

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S. No.	Indicators	Source
8.1.3	Percent of households with access to water for household tasks.	(i) Census: Housing tables, Census of India 2001.
8.1.4	Percent of households with the access to PHC.	(i) Census: Housing tables, Census of India 2001.
8.1.5	Percent of households with access to road connectivity.	(i) Census: Housing tables, Census of India 2001.
8.1.6	Percent of households using polluting fuels	(i) Census: Housing tables, Census of India 2001.

List of 18 Indicators Identified for Tracking in the Past

S. No.	Serial No. in Appendix 4.2	Indicators	Source
1	Same as 6.1.1	Sex Ratio	(i) Census: Primary Census Abstract, Table A-5, 2001.
2	Same as 6.1.2	Sex Ratio in the Age Group 0-6 Years	(i) Census: Primary Census Abstract, Table A-5, 2001
3	Same as 4.1.2	Under Five Mortality Rate.	(i) Sample Registration System Report No. 2 of 2005. Office of RGI. (ii) National Family Health Survey II 1998-99
4	Not in table in Appendix 4.2	Age Specific Mortality Rate in the Age Group 15-34 Years.	(i) Sample Registration System Report No. 2 of 2005, Office of RGI. (ii) National Family Health Survey II 1998-99
5	Same as 2.1.3	Work Participation Rates.	(i) Census: Primary Census Abstract, Table A-5, 2001. (ii) NSS: Report No. 516; Employment and Unemployment situation among social groups in India, NSS 61 st Round (2004-05).
6	Not in table in Appendix 4.2	Percentage of Non Farm Workers among Workers.	(i) Census: Primary Census Abstract Table A-5, 2001.
7	Same as 2.1.7	Percentage of Agricultural Labourers among Marginal/ Subsidiary Workers.	(i) Census: Primary Census Abstract, Table A-5, 2001.
8	Same as 2.1.2	Agricultural Wage Rate M/F.	(i) Wage Rate in Rural India, Labour Bureau Ministry of Labour and Employment (2003-04).
9	Same as 1.1.1	Literacy Rate for the Age Group 6-14 Years.	(i) Selected Educational Statistics Report (2004-05), Ministry of Human Resource Development (ii) Census: Primary census Abstract, Table A-5, 2001. (iii) NSS: Report No 517: Status of Educational and Vocational Training in India, NSS 61 st Round (2004-05).
10	Not in table in Appendix 4.2	Percentage of Population Completed Middle Level.	(i) Census: Educational Level by Age and Sex, Table C-8, 2001.
11	Not in table in Appendix 4.2	School Attendance Rate for Age Group 6-14 Years.	(i) NSS: Report .516; Employment and Unemployment Situation among Social Groups in India, NSS 61 st Round 2004-05.
12	Same as (5.1.2) (5.1.3) (5.1.4) (5.1.5)	Percentage of Persons Voting, Contesting, and Elected in Central and State General Elections.	(i) Lok Sabha and Rajya Sabha Secretariat. (ii) Secretary Election Commission of India.
13.	Same as 1.7.4	No. of Unnatural Deaths per Lakh Population.	(i) National Crime Records Bureau, Ministry of Home Affairs 2004.
14	Not in table in Appendix 4.2	Percentage of Sterilisations.	(i) Department of Family Welfare, Ministry of Health & Family Welfare 1999.
15.	Not in table in Appendix 4.2	Percentage of Employment in Central/State Government and Local Bodies.	(i) Director General of Employment & Training, Ministry of Labour 2004.

S. No.	Serial No. in Appendix 4.2	Indicators	Source
16	Not in table in Appendix 4.2	Percentage of Non Death Crimes against Women.	(i) National Crime Records Bureau, Ministry of Home Affairs 2004.
17.	Not in table in Appendix 4.2	Percentage of women with land and assets registered in their own names.	
18.	Same as 1.1.7	Percentage of Students Appearing for the 10 th Class Board Examinations.	(i) Census: Population Attending Educational Institutional by Completed Educational Level, Age & Sex, Table C-11, 2001.

MWCD-UNDP-IIPA Project for Preparation of Gender Development Index/ Gender Empowerment Measure

Second Technical Advisory Committee Workshop: A Report

The Second Technical Advisory Committee (TAC) Workshop for GDI and GEM was held on 24 June, 2008 in the Conference Hall, Indian Institute of Public Administration (IIPA). The workshop was organized by Ministry of Women and Child Development and Indian Institute of Public Administration, in collaboration with United Nations Development Programme.

The purpose of the workshop was to:

- i) Finalize Dimensions and Indicators for GDI and GEM
- ii) Discuss the methodology for compilation of GDI and GEM
- iii) Determine Data Sources

The TAC Workshop Programme is at **Appendix 5.1**.

The workshop was attended by the following TAC members and Special Invitees:

- 1) Smt. S. Jeyalakshmi, Statistical Adviser, MWCD, Chairperson TAC
- 2) Prof. Devaki Jain, C/o Singamma Sreenivasan Foundation, Tharanga, 10th Cross Raj Mahal Villas Extension, Bangalore-560080
- 3) Prof. Amita Majumdar, Economic Research Unit, Indian Statistical Institute, 203, BT Road, Kolkata-700108
- 4) Dr K. Seeta Prabhu, UNDP
- 5) Shri Srikara Naik, Director (WCD), Planning Commission, Yojana Bhawan
- 6) Ms. Achala Mediratta, TCPO, M/o Urban Development
- 7) Dr. Suraj Kumar, UN System (Special Invitee)
- 8) Ms. Ritu Mathur, Programme Officer, UNDP
- 9) Ms. Govind Kelkar, UNIFEM (Special Invitee)
- 10) Ms. Pratima Gupta, Dy. Director, MWCD
- 11) Prof. Aasha Kapur Mehta, Member Secretary, TAC, Professor of Economics, Indian Institute of Public Administration

The following TAC members did not attend the meeting:

Dr. Kiran Chadha, Joint Secretary, MWCD

Ms. Manjula Krishnan, Economic Adviser, MWCD

Prof. Ram, Director, International Institute of Population Sciences, Mumbai

Prof. Indira Hirway, Director and Prof. of Economics, Centre for Development Alternatives, Ahmedabad

Sh. G.C. Manna, Deputy Director General, Survey Design Research Division, NSSO, M/o Statistics and Programme Implementation, Kolkata

Sh. S. Chakrabarti, Director, Social Statistics Division, Central Statistical Organisation, M/o Statistics and Programme Implementation

Representative of M/o of Rural Development

Sh. Pravin Srivastava, Director (Stat), M/o Health and Family Welfare

Smt. Harjot Kaur, Director, M/o Labour and Employment

Smt. Suman Prasher, Joint Director, O/o Registrar General of India

Ms. Richa Sharma, Deputy Secretary, D/o School Education and Literacy, M/o Human Resource Development

Also present at the meeting were Shri. R.V.P. Singh, Research Officer, Planning Commission, Dr. Swapna Bist Joshi, Project Officer, GB, MWCD and Ms. Parma Adhikari, Research Officer, GDI GEM Project, IIPA.

Director IIPA welcomed the TAC members. Ms. Jeyalakshmi, Chairperson, TAC also welcomed the TAC members and presided over the meeting.

At the outset, the Member Secretary apprised the TAC members of the reason for the delay in holding the Second TAC workshop. The project budget was prepared before the Technical Advisory Committee was constituted and did not provide for airfares for five outstation members. Additionally, it was felt that at least three TAC meetings/workshops were needed while the budget provided only for two. Therefore the budget needed to be revised. The revised budget has since been approved by M/o WCD.

Decisions taken at the TAC Workshop:

- Only two indices would be calculated: (i) GDI and (ii) GEM.
- GDI and GEM would be calculated at the national or All-India level, for States and for two Districts.
- The estimates would be prepared at two time points: 1991 and 2001.
- The same three Dimensions used in UNDP's GDI and GEM would be maintained with one marginal change: Dimension 2 of GEM would be 'Economic and Social Participation and Decision-making' instead of just 'Economic Participation and Decision-making'.
- The same dimension ordering or listing would be used as for UNDP's GDI and GEM.
- The basket of indicators used to compile the index for each dimension would be changed as needed and enlarged.
- The title for the Report suggested by Prof. Devaki Jain was "Gendering Human Development Indices: Recasting the GDI and GEM for India." This was agreed to.
- Data sources would be examined by the IIPA Technical team and, where required, TAC members would be requested to facilitate procurement of data and provide suggestions.

Dimensions and Indicators of GDI and GEM were decided by the TAC members. The list may be further pruned based on data availability/suggestions.

Dimensions and Indicators for GEM

Dimension (1) Political Participation and Decision-making Power

Indicators

- i) % Share of Parliamentary Seats
- ii) % Seats of Legislature, *Zilla Parishads, Panchayat Samiti, Gram Panchayats*, Urban Local Bodies
- iii) % Representation in Parliamentary Committees
- iv) % Candidates in Electoral Process
- v) % Central and State Council of Ministers
- vi) % Participation in Governance Structures of Political Parties
- vii) % Electors exercising the right to vote
- viii) % Membership of Trade Unions

Dimension (2) Economic and Social Participation and Decision-making Power

Indicators

- i) % Share in All India Civil Services
- ii) % Participation in National Commissions
- iii) % Participation in State Planning Boards and District Planning Committees
- iv) % Senior Managers in the Corporate Sector
- v) % Participation in Banks, Co-operative Banks and Financial Institutions
- vi) % Share of Professionals (Judges, Lawyers, Doctors, Engineers, Journalists)
- vii) % Participation in Decision-making Bodies of Journalists, Lawyers, etc.

Dimension (3) Power over Economic Resources

Indicators

- i) Female/Male Ownership of Assets such as land, dwelling, livestock, and productive assets
- ii) Female/Male who Availed of Credit
- iii) Female/Male Estimated Earned Income

Dimensions and Indicators for GDI

Dimension (1) A Long and Healthy Life

Indicators

- i) IMR (Girls/Boys)
- ii) Life Expectancy at age 1 (Girls/Boys)
- iii) % Children underweight (Girls/Boys)

Dimension (2) Knowledge

Indicators

- i) 7+ Literacy Rate
- ii) Primary, Secondary and Tertiary Combined Gross Enrolment Ratio
- iii) Use of ICT (Internet + Radio + TV + Mass Communication)

Dimension (3) A Decent Standard of Living

Indicators

- i) Share of Agricultural Income
- ii) Share of Income in the Non-Agricultural Informal Sector

Way Forward

The TAC Chairperson and Member Secretary were requested to:

- Assign weights to the indicators used for each dimension. Weights suggested at the TAC workshop for the 'Long and Healthy Life' and 'Knowledge' dimensions were 50% for the first and 25% each for the second and third indicators.
- Suggest the goal posts to be used.
- Discuss the framework, suggested dimensions, choice of indicators, indicators identified, weights and goal posts with four experts and request them for their expert comments and suggestions. The experts were Dr. P. Sen, Secretary and Chief Statistician GOI; Prof. Amitabh Kundu, JNU; Dr S.K. Nath, DG Central Statistical Organisation, M/o S&PI and Dr. J. Dash, Addl. DG, Social Statistics Division, M/o S&PI.

Subsequently, the indices would be compiled and a draft report prepared and presented to TAC and at a Multi-stakeholder Workshop.

The meeting ended with a vote of thanks to the Chair.

**MWCD-UNDP-IIPA Project for Preparation of Gender Development Index/
Gender Empowerment Measure
Technical Advisory Committee Workshop**

**Workshop Programme
24th June, 2008**

10.30 to 10.35: Welcome to TAC Members	B.S Baswan Director IIPA
10.35 to 11.00: Project Status Presentation	Chair: S. Jeyalakshmi (Chairperson TAC) Aasha Kapur Mehta Parma Adhikari
11.00 to 12.00: Finalising dimensions and indicators for GEM	Chair: Devaki Jain TAC Members
12.00 to 13.00: Finalising dimensions and indicators for GDI	Chair: Seeta Prabhu TAC Members
13.00 to 14.00: Lunch	
14.00 to 16.00: GDI/GEM: Discussion on Methodology	Chair: S. Jeyalakshmi TAC Members
16.00 to 16.15: Tea	
16.15 to 17.15: Data Sources for finalized indicators	Chair: S. Jeyalakshmi TAC Members
17.15 to 17.25: Way forward	MWCD and UNDP
17.25 to 17.30: Vote of Thanks	Pratima Gupta, MWCD Aasha Kapur Mehta (Member Secretary TAC)

MWCD-UNDP-IIPA Project for Preparation of Gender Development Index and Gender Empowerment Measure

Third Technical Advisory Committee Workshop: A Report

The Third Technical Advisory Committee (TAC) Workshop for GDI and GEM was held on 28th November, 2008 in the Conference Hall, Indian Institute of Public Administration (IIPA). The workshop was organised by the Ministry of Women and Child Development and the Indian Institute of Public Administration, in collaboration with United Nations Development Programme (UNDP).

The purpose of the workshop was to finalise the indicators and methodology for compilation of GDI and GEM and modalities for a multi-stakeholder workshop. The TAC Workshop Programme is at **Appendix 6.1**.

The Workshop was attended by the following members and special invitees:

Smt. Vijayalakshmy K. Gupta, Additional Secretary, MWCD, New Delhi, Chair

Smt. S. Jeyalakshmi, Statistical Adviser, MWCD, New Delhi, Co-Chair

Prof. Devaki Jain, C/o Singamma Sreenivasan Foundation, Tharanga, 10th Cross Raj Mahal Vilas Extension, Bangalore

Dr. K. Seeta Prabhu, UNDP, New Delhi

Prof. Indira Hirway, Director and Professor of Economics, Centre for Development Alternatives, Ahmedabad

Sh. G.C. Manna, Deputy Director General, Survey Design Research Division, NSSO, M/o Statistics and Programme Implementation, Kolkata

Sh. S. Chakarbarti, Director, Social Statistics Division, Central Statistical Organisation, M/o Statistics and Programme Implementation, New Delhi

Ms. Suman Prasher, Joint Director, O/o Registrar General of India

Prof. Amita Majumdar, Economic Research Unit, Indian Statistical Institute, 203, BT Road, Kolkata

Ms. Ritu Mathur, Programme Officer, UNDP, New Delhi

Ms. Govind Kelkar, UNIFEM, New Delhi (Special Invitee)

Ms. Pratima Gupta, Dy. Director, MWCD, New Delhi

Ms. Rashmi Verma, M/o Health and Family Welfare, New Delhi

Prof. Aasha Kapur Mehta, Member Secretary, TAC, Professor of Economics, Indian Institute of Public Administration, New Delhi

The following members did not attend the meeting:

Dr Kiran Chadha, Joint Secretary, MWCD, New Delhi

Ms. Manjula Krishnan, Economic Adviser, MWCD, New Delhi

Prof. Ram, Director, International Institute of Population Sciences, Mumbai

Dr. Suraj Kumar, UN System, New Delhi

Smt. Harjot Kaur, Director, M/o Labour and Employment, New Delhi

Sh. Srikara Naik, Director (WCD), Planning Commission, New Delhi

Dr. Achala Mediratta, M/o Urban Development, New Delhi

Also present at the meeting were Shri Sanjay Pratap, Ms. Parma Adhikari and Shri Saikat Banerjee, Research Officers, IIPA, New Delhi.

- 1) The Chairperson, Ms. Jeyalakshmi and Member Secretary, Prof. Aasha Kapur Mehta welcomed the TAC members.
- 2) Ms. Jeyalakshmi, Chairperson, TAC, proposed that Ms. Vijayalakshmy Gupta, Additional Secretary, MWCD, Chair the meeting and the Committee. This was seconded by Prof. Amita Majumdar.
- 3) The Draft Report of Second TAC workshop held on 24th June 2008, including the list of potential indicators for each of the three dimensions finalised for GDI and GEM at the workshop, was circulated for comments to all TAC members on 8th July 2008.

Meetings were held with the following experts identified by the TAC:

- i) Dr. P. Sen, Secretary M/o S&PI and Chief Statistician, GOI, on 28th July, 2008;
- ii) Dr. S.K. Nath, DG Central Statistical Organisation, M/o S&PI, on 6th August, 2008.
- iii) Prof. Amitabh Kundu, JNU, on 11th August, 2008.

Discussions with Dr. Sen and Dr. Nath were primarily with reference to suggested dimensions and choice of indicators, while those with Prof. Kundu focused primarily on the method for constructing the index and weights and goal posts.

Comments received from TAC members till 25th July 2008 were incorporated in the dimension-wise list of indicators for GDI and GEM and discussed with Secretary, MOSPI on 28th July, 2008. The suggestions made by Secretary MOSPI were entitled Attachment 2 and circulated on 29th July 2008 to all TAC members for comments. TAC members' comments on Attachment 2 and suggestions made by DG CSO regarding additional indicators were included in the note entitled Attachment 3 and circulated together with some of the indicator-related suggestions made by DG CSO as Attachment 3 and emailed to TAC members on 4th August, 2008. The Final Report of the Second TAC workshop was emailed to TAC members on 17th August, 2008.

- 4) Data has now been collected on most of the indicators recommended by TAC members. However, despite the help extended by many of the data providing agencies and Ministries and Departments, several data gaps remain. Most important among these are:
 - i) Female/Male Estimated Earned Income Share and the wage rates on which the estimates were based.
 - ii) Access to credit below Rs. 2 lakh for both time points, 2006 and 1996 and access to credit above Rs. 2 lakh for 1996.

5) The following decisions were taken at the TAC workshop:

The final list of Indicators within the dimensions of GDI and GEM was decided by the TAC members (see Tables 1 and 2).

- The number of indicators for measuring each dimension should be small.
- Overlapping should be avoided as far as possible.
- There will be a strong relationship between some of the finalised indicators. While indicators may be used despite this, justification for use will be needed. The report should clearly state the reasons for the selection of the final list of indicators. Correlation matrices can be used to curtail the number of indicators where the number is large.
- Data on indicators that have been dropped in the TAC workshop dated 28th November 2008 should be included in the explanations segment of the report.
- The income indicator estimated for GDI would also be used in estimating GEM.
- Equal weights would be assigned to all the indicators.
- The value to be used for epsilon (ϵ) = 2.
- It would be desirable to estimate income earned share based on NSS Rural and Urban Wage Rate for agricultural and non-agricultural sector (combined) and (ii) Rural and Urban (Principal + Subsidiary workers) in the agricultural and non-agricultural sector (combined). Before the workshop concluded an request was sent by MWCD to DG NSS for urgent provision of the data.

**Table 1: Gendering Human Development Indices: Recasting GDI for India
Dimensions and Indicators**

Dimension 1: A Long and Healthy Life	
S.No.	Indicators
i)	Infant Mortality Rate
ii)	Life Expectancy at age 1
Dimension 2: Knowledge	
S.No.	Indicators
i)	7+ Literacy rate
ii)	Combined Gross Enrolment ratio (I-VIII) or Mean Years of Education (15+ age group)
Dimension 3: A Decent Standard of Living	
S.No.	Indicators
i)	Female/Male Estimated Earned Income Share per capita per annum

**Table 2: Gendering Human Development Indices: Recasting GEM for India
Dimensions and Indicators**

Dimension 1: Political Participation & Decision-making Power	
S.No.	Indicators
i)	% Share of Parliamentary Seats (elected)
ii)	% Share of Seats in Legislature (elected)
iii)	% Share of Seats in <i>Zilla Parishads</i> (elected)
iv)	% Share of Seats in <i>Gram Panchayats</i> (elected)
v)	% Candidates in Electoral Process in National Parties
vi)	% Electors Exercising the Right to Vote
Dimension 2: Economic and Social Participation & Decision-making Power	
S.No.	Indicators
i)	% Share of Officials in Service in IAS, IPS and Indian Forest Service
ii)	% Share of Enrolment in Medical and Engineering Colleges
iii)	Work Force Participation Rate (WFPR) in Non-agricultural Sector (if data available)

Contd...

- Indicators such as percentage of children underweight; use of ICT; percentage of central and state council of ministers; percentage of representation in Lok Sabha and Rajya Sabha Committees; etc. would not be used in estimating the index but would be used in the explanations section of the report.
- Data gaps identified would be highlighted.
- Estimates of GDI and GEM would be compiled for two periods of time, 2006 and 1996.

Issues: Dates for Submission of Report and Multi-stakeholder Workshop

- UNDP requires that the Multi-stakeholder Workshop be held before 18th December, 2008 and the Concept Note/Report be submitted by 8th December, 2008.
- The third TAC workshop was held at IIPA on 28th November, 2008. This was the earliest possible after completion of administrative arrangements with UNDP on 18th November, 2008 for the additional TAC workshop and was based on availability of TAC members.
- Despite the help extended by data providing agencies and Ministries and Departments of Government of India and the two chosen districts, data gaps remain.

Table 2 (Contd.)

Dimension 3: Power over Economic Resources	
S.No.	Indicators
i)	% of Operational Land Holdings and Area Operated
ii)	Number of Females/Males with Bank Accounts in Scheduled Commercial Banks (credit limit above Rs. 2 lakh)
iii)	Female/Male Estimated Earned Income Share per capita per annum as estimated for GDI

- In view of the constraints on timelines it was decided that:
 - The Multi-stakeholder Workshop would be held on or before 17th December, 2008 depending on the availability of the Conference Hall.
 - Efforts were being made by MWCD to procure the data required for the two critical gaps (wage rates for estimating Income and data on credit at least for amounts over Rs. 2 lakh for 1996).
 - MWCD and UNDP would provide a list of names and addresses of officers and a few others to be invited to the Workshop.
 - In view of the timeline requirements of UNDP, a Concept Paper/Report would be circulated at the earliest possible but no later than 12th December, 2008.

The meeting ended with a vote of thanks to the Chair.

MWCD-UNDP-IIPA Project for Preparation of Gender Development Index and Gender Empowerment Measure

Technical Advisory Committee Workshop:

Agenda

28th November, 2008

10.15 to 10.30: Tea

10.30 to 10.35: Welcome to TAC Members: Smt. S. Jeyalakshmi, Prof. Aasha Kapur Mehta

10.35 to 14.00: Compilation of GDI and GEM: Status and Discussion on Issues

14.00: Lunch

14.45 to 15.00: Planning the Multi-stakeholder Workshop

Technical Note on Computation of Indices - HDI, GDI and GEM¹

Computation of Human Development Index (HDI)

The HDI measures human development in India, States and UTs in three basic dimensions:

Dimension 1: 'A Long and Healthy Life'

Indicators: i) Infant Mortality Rate and ii) Life Expectancy at age 1.

The negative index for infant mortality rate was converted to a positive index by subtracting the value of the index from 1.

Dimension 2: 'Knowledge'

Indicators: i) 7+ Literacy Rate and ii) Mean Years of Education for 15+ age group.

Dimension 3: 'A Decent Standard of Living'

Indicator: i) Estimated Earned Income per capita per annum.

The indicators identified for measuring each of the three dimensions, viz., 'a long and healthy life', 'knowledge' and 'a decent standard of living', are made scale free and performance on each of them is expressed as a value between 0 and 1 by applying the following standard formula:

$$\text{Index Scale Free Value} = \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

The maximum and minimum values or goal posts are selected for each indicator used for estimating HDI. Table A.1 lists the maximum and minimum goal posts that were applied to make each selected indicator scale free for estimating HDI.

The Index Scale Free Value for indicator "Estimated Earned Income per capita per annum" is calculated using logarithm values.

Table A.1: Goal Posts for HDI

	Maximum	Minimum
'A Long and Healthy Life'		
Infant Mortality Rate	105 per 1000 live births	0 per 1000 live births
Life Expectancy at age 1	85 years	25 years
'Knowledge'		
7+ Literacy rate	100 percent	0 percent
Mean Years of Education (15+ age group)	25 years	1 year
'A Decent Standard of Living'		
Estimated Earned Income per capita per annum	Rs. 1,50,000	Rs. 100

¹ This Technical Appendix is adapted on the basis of the Technical Appendix to the UNDP Human Development Reports

The weights used for combining the three dimensions as well as the indicators within each dimension are presented in Tables A.2 for HDI.

Table A.2: Weights for Dimensions and Indicators - HDI

Dimensions/Indicators	Weights
Dimension 1: 'A Long and Healthy Life'	One - third
Infant Mortality Rate	Half for each indicator within the dimension
Life Expectancy at age 1	
Dimension 2: 'Knowledge'	One - third
7+ Literacy rate	Two thirds within the dimension
Mean Years of Education for 15+ age group	One third within the dimension
Dimension 3: 'A Decent Standard of Living'	One - third
Estimated Earned Income Share per capita per annum	

The HDI is then calculated as a simple average of three dimension indices.

BOX 1

Calculating the HDI: An Illustration Based on Data for Andhra Pradesh

1. Long and Healthy Life Index

The Long and Healthy Life Index measures relative achievement based on combining two scale free indices:

- (a) The scale free index for IMR subtracted from 1 and
- (b) Index for Life Expectancy at age 1

In 2006, Andhra Pradesh had an IMR of 56 and Life Expectancy at age 1 was 67.6 years. The Long and Healthy Life Index for Andhra Pradesh is calculated as follows:

Step 1: The Goal Posts listed in Table A.1 are used to make the indicators scale free:

$$\text{IMR index} = (56 - 0)/(105 - 0) = 0.533$$

$$\text{IMR index converted to a positive index} = 1 - 0.533 = 0.467$$

$$\text{LE at 1 index} = (67.6 - 25)/(85 - 25) = 0.710$$

Step 2: The Weights listed in Table A.2 are used to combine the indices:

$$\text{Therefore the Long and Healthy Life Index} = 1/2(0.467 + 0.710) = \mathbf{0.588}$$

Contd...

2. Knowledge Index

The Knowledge Index measures relative achievement based on combining two scale free indices:

- (a) The 7+ literacy index and
- (b) Index for Mean Years of Education for 15+ age group.

In 2006, the 7+ Literacy Rate for Andhra Pradesh was 59.1% and Mean Years of Education were 3.8 years.

The Knowledge Index for Andhra Pradesh is calculated as follows:

Step 1: The Goal Posts listed in Table A.1 are used to make the indicators scale free:

$$7+ \text{ literacy index} = (59.1 - 0)/(100 - 0) = 0.591$$

$$\text{Mean Years of Education} = (3.8 - 1)/(25 - 1) = 0.119$$

Step 2: The Weights listed in Table A.2 are used to combine the indices:

$$\text{Knowledge Index} = 2/3(0.591) + 1/3(0.119) = \mathbf{0.434}$$

3. A Decent Standard of Living Index

The Decent Standard of Living Index measures relative achievement based on Income per capita.

NSDP for Andhra Pradesh for 2005-06, at constant 1999 prices was Rs 17146200 lakh.

Projected Population was 804.30 lakh.

Therefore NSDP per capita for Andhra Pradesh for 2005-06, at constant 1999 prices, was estimated at Rs. 21318.16.

$$\text{Income index} = \{\log(21318.16) - \log(100)\} / \{\log(150000) - \log(100)\} = \mathbf{0.733}$$

4. Human Development Index (HDI)

HDI is calculated as a simple average of the three Indices estimated above (Long and Healthy Life, Knowledge and Decent Standard of Living)

$$\text{HDI for Andhra Pradesh in 2006} = 1/3(\mathbf{0.588} + \mathbf{0.434} + \mathbf{0.733}) = \mathbf{0.585}$$

Computation of Gender-related Development Index (GDI)

While GDI and GEM are also computed by combining the three dimension indices on the basis of equal weights, the gender based indices apply a penalty for disparities between men and women, i.e., the value of epsilon is taken as 2, which is moderate penalty.

GDI is estimated on the basis of the same three dimensions as the HDI but adjusts the average achievement in respect of these three dimensions to reflect the inequalities between men and women. Each dimension is made scale free based on goal posts specified in Table A.3. The scale free indices are calculated separately for females and males for IMR, LE at age 1, Literacy 7+ and Mean Years of Education for 15+ age group. Estimation of Female/Male Earned Income Share is more complex and is based on relative female and male wage rates for casual labourers applied to all female and male workers in principal plus subsidiary status using NSS work force participation rates and Census population projections. Scaling is based on the log of earned income share adjusted by the maximum and minimum goal posts for men and women.

Table A.3: Goal Posts for GDI

	Maximum	Minimum
'A Long and Healthy Life'		
Infant Mortality Rate	105 per 1000 live births	0 per 1000 live births
Life Expectancy at age 1	87.5 years for females and 82.5 for males	27.5 years for females and 22.5 for males
'Knowledge'		
7+ Literacy rate	100 percent	0 percent
Mean Years of Education (15+ age group)	25 years	1 year
'A Decent Standard of Living'		
Female/Male Estimated Earned Income share per capita per annum	Rs. 1,50,000	Rs. 100

After estimating the scale free indices, equally distributed indices are computed for each of the dimensions of GDI. As the value of epsilon is taken as 2, the equally distributed index becomes the weighted harmonic mean of the scale free index, the weights being the population share.

The weights used for combining the three dimensions as well as the indicators within each dimension are presented in Tables A.4 for GDI.

Table A.4: Weights for Dimensions and Indicators - GDI

Dimensions/Indicators	Weights
Dimension 1: 'A Long and Healthy Life'	One - third
Infant Mortality Rate	Half for each indicator within the dimension
Life Expectancy at age 1	
Dimension 2: 'Knowledge'	One - third
7+ Literacy rate	Two thirds within the dimension
Mean Years of Education for 15+ age group	One third within the dimension
Dimension 3: 'A Decent Standard of Living'	One - third
Female/Male Estimated Earned Income Share per capita per annum	

The calculation of GDI is done in three steps:

Step 1

$$\text{Index Scale Free Value} = \frac{\text{Actual value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

The maximum and minimum values or goal posts are selected for each indicator used for estimating GDI. Table A.3 lists the maximum and minimum goal posts that were applied to make each selected indicator scale free for estimating HDI.

Step 2

The female and male indices in each dimension are combined in a way that penalises disparities in achievement between men and women. The resulting index referred to as the equally distributed index is calculated according to the general formula.

Equally distributed index

$$= \{[\text{female population share} (\text{female index}^{1-\varepsilon})] + [\text{male population share} (\text{male index}^{1-\varepsilon})]\}^{1/1-\varepsilon}$$

ε measures the aversion to inequality. The value of ε is taken as 2. Thus the equation becomes

Equally distributed index

$$= \{[\text{female population share} (\text{female index}^{-1})] + [\text{male population share} (\text{male index}^{-1})]\}^{-1}$$

Step 3

The GDI is calculated by computing the simple average of three equally distributed indexes.

BOX 2

Calculating the GDI: An Illustration based on Data for Andhra Pradesh

Dimension 1: A Long and Healthy Life Index

The Long and Healthy Life Index for the GDI is based on combining two scale free indices:

- (a) the scale free index for IMR subtracted from 1 and
- (b) index for Life Expectancy at age 1

In 2006, Andhra Pradesh had an IMR for females of 58 and Life Expectancy at age 1 was 68.7 years. IMR for males was 55 and Life Expectancy at age 1 was 66.2 years.

The Long and Healthy Life Index for Andhra Pradesh is calculated as follows:

Step 1: The Goal Posts listed in Table A.3 are used to make the indicators scale free:

$$\text{IMR index for females} = (58 - 0)/(105 - 0) = 0.552$$

$$\text{IMR index for females converted to a positive indicator} = 1 - 0.552 = 0.448$$

Contd...

Similarly,

$$\text{IMR index for males} = (55 - 0)/(105 - 0) = 0.524$$

$$\text{IMR index for males converted to a positive indicator} = 1 - 0.524 = 0.476$$

$$\text{Female life expectancy index} = (68.7 - 0)/(87.5 - 27.5) = 0.687$$

$$\text{Male life expectancy index} = (66.2 - 0)/(82.5 - 22.5) = 0.728$$

Step 2: The Weights listed in Table A.4 are used to combine the IMR and Life Expectancy at age 1 indices separately for females and males:

$$\text{Female Long and Healthy Life Index} = 1/2(0.448 + 0.687) = 0.567$$

$$\text{Male Long and Healthy Life Index} = 1/2(0.476 + 0.728) = 0.602$$

Step 3: Calculating the Equally Distributed Long and Healthy Life Index

Equally Distributed Long and Healthy Life Index

$$= \{[\text{female population share (female index}^{-1})] + [\text{male population share (male index}^{-1})]\}^{-1}$$

$$\text{Female Population Share} = 0.495$$

$$\text{Male Population Share} = 0.505$$

$$\begin{aligned} \text{Equally Distributed Long and Healthy Life Index} &= \{[0.495 (0.567)^{-1}] + [0.505 (0.602)^{-1}]\}^{-1} \\ &= \mathbf{0.584} \end{aligned}$$

Dimension 2: Knowledge Index

The Knowledge Index measures the relative achievement based on combining two scale free indices:

- (a) the 7+ literacy rate index and
- (b) index for Mean Years of Education for 15+ age group.

In 2006, 7+ Literacy Rate was 68.6% for males and 50% for females while Mean Years of Education was of 3.8 years. The Knowledge Index for Andhra Pradesh is calculated as follows:

Step 1: The Goal Posts listed in Table A.3 are used to make the indicators scale free:

$$\text{Female Literacy Rate (7+) Index} = (50 - 0)/(100 - 0) = 0.500$$

$$\text{Male Literacy Rate (7+) Index} = (68.6 - 0)/(100 - 0) = 0.686$$

$$\text{Female Mean Years of Education Index} = (2.8 - 1)/(25 - 1) = 0.076$$

$$\text{Male Mean Years of Education Index} = (4.9 - 1)/(25 - 1) = 0.163$$

Contd...

Step 2: The Weights listed in Table A.4 are used to combine the 7+ Literacy Rate and Mean Years of Education Indices separately for females and males:

$$\text{Knowledge Index} = 2/3\{\text{Literacy Rate (7+)} \text{ Index}\} + 1/3\{\text{Mean Years of Education Index}\}$$

$$\text{Female Knowledge Index} = 2/3(0.500) + 1/3(0.076) = 0.359$$

$$\text{Male Knowledge Index} = 2/3(0.686) + 1/3(0.163) = 0.512$$

Step 3: Calculating the Equally Distributed Knowledge Index

Equally Distributed Knowledge Index

$$= \{[\text{female population share (female index}^{-1})] + [\text{male population share (male index}^{-1})]\}^{-1}$$

$$\text{Female Population Share} = 0.495$$

$$\text{Male Population Share} = 0.505$$

$$\text{Equally Distributed Knowledge Index} = \{[0.495 (0.359)^{-1}] + [0.505 (0.512)^{-1}]\}^{-1} = \mathbf{0.422}$$

Dimension 3: A Decent Standard of Living Index

The Decent Standard of Living Index measures relative achievement based on Income shares. NSDP for Andhra Pradesh for 2004-05, at constant 1999 prices was estimated at Rs. 171462 crore. Estimation of female and male earned incomes requires the following steps.

Step 1: Estimate the female share of the wage bill based on

$$\text{Female share of wage bill} = \frac{\{(W_f / W_m) * EA_f\}}{\{(W_f / W_m) * EA_f\} + EA_m}$$

Or in other words,

$$\text{Female share of wage bill} = \frac{(W_f * EA_f)}{(W_f * EA_f) + (W_m * EA_m)}$$

where W_f = female wage rate

W_m = male wage rate

EA_f = Proportion of females who are economically active

EA_m = Proportion of males who are economically active

Applying this we have the following:

The ratio of female to male casual wage per day for Andhra Pradesh is estimated at 0.599

The proportion of the female population that is economically active in Andhra Pradesh is 0.408 while the proportion of the male population that is economically active in Andhra Pradesh is 0.592

$$\begin{aligned} \text{The share of the female wage bill is} &= (0.599 * 0.408) / \{(0.599 * 0.408) + 0.592\} \\ &= 0.292 \text{ (or more accurately, 0.2918)} \end{aligned}$$

The share of the male wage bill is $1 - 0.292$.

Contd...

Step 2: Female Earned Income is estimated as:

$$\{(\text{female share of the wage bill}) * (\text{NSDP at constant prices})\} / \text{Female Population}$$

NSDP for Andhra Pradesh for 2005-06, at constant 1999 prices was Rs 17146200 lakh.

Projected Population was 804.30 lakh in 2006.

Projected Female Population was 398.38 lakh in 2006.

Therefore Female Earned Income for Andhra Pradesh = $(0.292 * 17146200) / 398.38 = 12561$.

Projected Male Population was 405.92 lakh

Therefore Male Earned Income for Andhra Pradesh = $\{17146200 - (0.292 * 17146200)\} / 405.92 = 29913$.

Step 3: The Income Index is now calculated separately for females and males. Income is adjusted by taking the log of estimated earned income and applying the goal posts listed in Table A.3 to make the indicators scale free:

$$\begin{aligned} \text{Female Income Index is then estimated as } & \frac{\{\log(12561) - \log(100)\}}{\{\log(150000) - \log(100)\}} \\ & = 0.661 \end{aligned}$$

$$\begin{aligned} \text{Male Income Index is then estimated as } & \frac{\{\log(29913) - \log(100)\}}{\{\log(150000) - \log(100)\}} \\ & = 0.780 \end{aligned}$$

Step 4: Calculating the Equally Distributed Standard of Living Index

Equally Distributed Standard of Living Index

$$= \{[\text{female population share} (\text{female index}^{-1})] + [\text{male population share} (\text{male index}^{-1})]\}^{-1}$$

Female Population Share = 0.495

Male Population Share = 0.505

$$\text{Equally Distributed Standard of Living Index} = \{[0.495 (0.661)^{-1}] + [0.505 (0.780)^{-1}]\}^{-1} = \mathbf{0.716}$$

Gender Development Index (GDI)

GDI is calculated as a simple average of the three Indices estimated above (Long and Healthy Life, Knowledge and Decent Standard of Living)

$$\text{GDI for Andhra Pradesh in 2006} = 1/3(\mathbf{0.584} + \mathbf{0.422} + \mathbf{0.716}) = \mathbf{0.574}$$

The Gender Empowerment Measure (GEM)

GEM captures gender inequality in three dimensions:

Dimension 1: 'Political Participation and Decision-making Power'

Dimension 2: 'Economic Participation and Decision-making Power'

Dimension 3: 'Power Over Economic Resources'

Focusing on women's opportunities rather than their capabilities, the GEM captures gender inequality between women and men in three key areas:

Political participation and decision-making power, as measured by the following indicators:

- i. % Share of Parliamentary Seats (elected);
- ii. % Share of Seats in Legislature (elected);
- iii. % Share of Seats in *Zilla Parishads* (elected);
- iv. % Share of Seats in *Gram Panchayats*
- v. % Candidates in Electoral Process in National Parties
- vi. % Electors exercising the right to vote

Economic participation and decision-making power, as measured by the following indicators:

- i. % Share of officials in service in Indian Administrative Service, Indian Police Service and Indian Forest Service
- ii. % Share of enrolment in medical and engineering colleges

Power over economic resources as measured by the following indicators:

- i. % Female/Male operational land holdings (due to data gaps in assets)
- ii. % Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)
- iii. Female/Male Estimated Earned Income Share per capita per annum.

For each of these three dimensions, an equally distributed equivalent percentage (EDEP) is calculated, as a population-weighted average, according to the following general formula (see also Box 3 for an illustration):

$$\text{EDEP} = \{[\text{female population share (female index}^{-1-\varepsilon})] + [\text{male population share (male index}^{-1-\varepsilon})]\}^{1/1-\varepsilon}$$

ε measures the aversion to inequality. In the GEM (as in the GDI), $\varepsilon = 2$, which places a moderate penalty on inequality. The formula is thus:

$$\text{EDEP} = \{[\text{female population share (female index}^{-1})] + [\text{male population share (male index}^{-1})]\}^{-1}$$

For political and economic participation and decision-making, the EDEP is then indexed by dividing it by 50. The rationale for this indexation: in an ideal society, with equal empowerment of the sexes, the GEM

variables would equal 50%, that is, women's share would equal men's share for each variable.

Where a male or female index value is zero, the EDEP according to the above formula is not defined. However, the limit of EDEP, when the index tends towards zero, is zero. Accordingly, in these cases the value of the EDEP is set to zero.

Female and Male Earned Income are estimated using following data:

- Ratio of male and female wage
- Male and female share of economically active population
- GDP/NSDP at constant prices

The weights used for combining the three dimensions as well as the indicators within each dimension are

Table A.5: Weights for Dimensions and Indicators - GEM

Dimensions/Indicators	Weights
Dimension 1: 'Political Participation & Decision-making Power'	One - third
% Share of Parliamentary Seats (elected)	One sixth for each indicator within the dimension
% Share of Seats in Legislature (elected)	
% Share of Seats in <i>Zilla Parishads</i> (elected)	
% Share of Seats in <i>Gram Panchayats</i> (elected)	
% Candidates in Electoral Process in National Parties in the Parliamentary election.	
% Electors exercising the right to vote in the Parliamentary election	
Dimension 2: 'Economic Participation and Decision-making Power'	One - third
% Share of officials in service in IAS, IPS and Indian Forest Service	Half for each indicator within the dimension
% Share of enrolment in medical and engineering colleges	
Dimension 3: 'Power over Economic Resources'	One - third
% Share of operational land holdings	One third for each indicator within the dimension
% Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)	
Female/Male Estimated Earned Income Share per capita per annum	

BOX 3

Calculating the GEM: An Illustration based on Data for Andhra Pradesh

Dimension 1: 'Political Participation & Decision-making Power' Index

The 'Political Participation & Decision-making Power' Index for GEM is based on combining the following six indicators:

- % Share of Parliamentary Seats (elected)
- % Share of Seats in Legislature (elected)

Contd...

- iii. % Share of Seats in *Zilla Parishads* (elected)
- iv. % Share of Seats in *Gram Panchayats* (elected)
- v. % Candidates in Electoral Process in National Parties
- vi. % Electors exercising the right to vote

In 2006, Andhra Pradesh had:

- 42 Parliamentary Seats and 3 women and 39 men were elected to these seats.
- 294 seats in the Legislature and 26 women and 268 men were elected to these seats.
- 21807 *Gram Panchayats* with 225276 elected representatives, of which 80518 were women and 144758 were men.
- 22 *Zilla Parishads* with 1097 elected representatives, of which 368 were women and 729 were men.
- 71 candidates from national parties participating in the election, of which 7 were women and 64 were men.
- 35776275 voters of which 18391831 are male and 17384444 female.

The 'Political Participation & Decision-making Power' Index for Andhra Pradesh is calculated as follows:

Step 1: Estimate the percentage share of women and men for each of the six indicators. The estimates are:

- i. 7.14% women and 92.86% men were elected to Parliament
- ii. 8.84% women and 91.16% men were elected to the Legislature
- iii. 33.55% women and 66.45% men were elected to the *Zilla Parishads*
- iv. 35.74% women and 64.26% men were elected to the *Gram Panchayats*
- v. 9.86% women and 90.14% men candidates from National Parties were in the Electoral Process.
- vi. 48.59% women and 51.41% men exercised the right to vote

Step 2: Calculating the Equally Distributed Equivalent Percentage for each of these Indicators

The Equally Distributed Equivalent Percentage for the given indicator

$$= \{[\text{female population share (female index}^{-1})] + [\text{male population share (male index}^{-1})]\}^{-1}$$

$$\text{Female Population Share} = 0.495$$

$$\text{Male Population Share} = 0.505$$

$$\begin{aligned} \text{Equally Distributed Equivalent Percentage of Parliamentary Seats} &= \{[0.495 (7.14)^{-1}] + [0.505 (92.86)^{-1}]\}^{-1} \\ &= 13.37. \end{aligned}$$

Contd...

Similarly,

Equally Distributed Equivalent Percentage of Seats in Legislature

$$= \{[0.495 (8.84)^{-1}] + [0.505 (91.16)^{-1}]\}^{-1} = 16.25.$$

$$\text{Equally Distributed Equivalent Percentage of Seats in ZP} = \{[0.495 (33.55)^{-1}] + [0.505 (66.45)^{-1}]\}^{-1} = 44.72.$$

$$\text{Equally Distributed Equivalent Percentage of Seats in GP} = \{[0.495 (35.74)^{-1}] + [0.505 (64.26)^{-1}]\}^{-1} = 46.06.$$

Equally Distributed Equivalent Percentage of Candidates in Electoral Process in national parties

$$= \{[0.495 (9.86)^{-1}] + [0.505 (90.14)^{-1}]\}^{-1} = 17.91.$$

$$\text{Equally Distributed Equivalent Percentage of Exercising Right to Vote} = \{[0.50 (48.59)^{-1}] + [0.50 (51.41)^{-1}]\}^{-1} = 49.95.$$

(In the case of index (vi) or exercising the right to vote, the weights used were share of the electorate instead of population share).

Step 3: The EDEP for each of the above Indicators is then indexed by dividing it by 50.

The Indexed EDEP for Parliamentary Seats is $13.37/50 = 0.27$

The Indexed EDEP for Seats in Legislature is $16.25/50 = 0.32$

The Indexed EDEP for Seats in ZP is $44.72/50 = 0.89$

The Indexed EDEP for Seats in GP is $46.06/50 = 0.92$

The Indexed EDEP for Candidates in Electoral Process in national parties is $17.91/50 = 0.36$

The Indexed EDEP for Exercising Right to Vote is $49.95/50 = 1.00$

Step 4: The Indexed EDEP values obtained above for each of the six indicators are added and divided by 6 or equal weights are given to all the 6 indicators and the Indexed EDEP for 'Political Participation & Decision-making Power' is obtained as

$$(0.27+0.32+0.89+0.92+0.36+1.00)/6 = \mathbf{0.628}$$

If data was available for only 4 or 5 of the 6 indicators, the total of the 4 or 5 Indexed EDEP values is obtained and divided by 4 or 5 respectively.

Dimension 2: 'Economic Participation and Decision-making Power' Index

The 'Economic Participation & Decision-making Power' Index for GEM is based on combining the following two indicators:

- i. % Share of officials in service in Indian Administrative Service, Indian Police Service and Indian Forest Service
- ii. % Share of enrolment in medical and engineering colleges

Contd...

In 2006, Andhra Pradesh had:

- 642 officials in service in Indian Administrative Service, Indian Police Service and Indian Forest Service of which 56 were women and 586 were men.
- 210464 persons were enrolled in medical and engineering colleges, of which 67240 were women and 143224 were men.

The 'Economic Participation & Decision-making Power' Index for Andhra Pradesh is calculated as follows:

Step 1: Estimate the percentage share of women and men for each of the two indicators. The estimates are:

- i. 8.72% women and 91.28% men were in Indian Administrative Service, Indian Police Service and Indian Forest Service
- ii. 31.95% women and 68.05% men were enrolled in medical and engineering colleges

Step 2: Calculating the Equally Distributed Equivalent Percentage for each of these Indicators

The Equally Distributed Equivalent Percentage for the given indicator

$$= \{[\text{female population share (female index}^{-1})] + [\text{male population share (male index}^{-1})]\}^{-1}$$

$$\text{Female Population Share} = 0.495$$

$$\text{Male Population Share} = 0.505$$

Equally Distributed Equivalent Percentage of officials in service in IAS, IPS and IFS

$$= \{[0.495 (8.72)^{-1}] + [0.505 (91.28)^{-1}]\}^{-1} = 16.05.$$

Equally Distributed Equivalent Percentage of enrolment in medical and engineering colleges

$$= \{[0.495 (31.95)^{-1}] + [0.505 (68.05)^{-1}]\}^{-1} = 43.63.$$

Step 3: The EDEP for each of the above Indicators is then indexed by dividing it by 50.

The Indexed EDEP for officials in service in IAS, IPS and IFS is $16.05/50 = 0.321$.

The Indexed EDEP for enrolment in medical and engineering colleges is $43.63/50 = 0.873$

Step 4: The Indexed EDEP values obtained above for each of the two indicators are added and divided by 2 or equal weights are given to both indicators and the Indexed EDEP for 'Economic Participation & Decision-making Power' is obtained as

$$(0.321 + 0.873)/2 = \mathbf{0.597}$$

If data was available for only 1 of the 2 indicators, the value for only 1 Indexed EDEP is used.

Dimension 3: 'Power over Economic Resources' Index

The 'Power over Economic Resources' Index for GEM is based on combining the following three indicators:

- i. % Female/Male operational land holdings
- ii. % Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)
- iii. Female/Male Estimated Earned Income Share per capita per annum

Contd...

In 2006, Andhra Pradesh had:

- (based on 2001 data), 11527000 operational holdings of which 2347000 were operated by women and 9180000 by men.
- 486721 credit accounts above 2 lakh in scheduled commercial banks of which 60062 were in the name of women and 426659 in the name of men.
- Earned Income for females and males is estimated as described for GDI above and Female Earned Income for Andhra Pradesh = 12561 and Male Earned Income = 29913.

Step 1: Estimate the percentage share of women and men for the first two indicators. The estimates are:

- 20.36% women and 79.64% men had access to operational holdings
- 12.34% women and 87.66% men had credit accounts above 2 lakh.

Step 2: Calculating the Equally Distributed Equivalent Percentage for each of these Indicators

The Equally Distributed Equivalent Percentage for the given indicator

$$= \{[\text{female population share} (\text{female index}^{-1})] + [\text{male population share} (\text{male index}^{-1})]\}^{-1}$$

$$\text{Female Population Share} = 0.495$$

$$\text{Male Population Share} = 0.505$$

Equally Distributed Equivalent Percentage of men and women with operational holdings

$$= \{[0.495 (20.36)^{-1}] + [0.505 (79.64)^{-1}]\}^{-1} = 32.61.$$

Equally Distributed Equivalent Percentage of men and women with credit accounts above 2 lakh

$$= \{[0.495 (12.34)^{-1}] + [0.505 (87.66)^{-1}]\}^{-1} = 21.79.$$

Step 3: The EDEP for each of the above Indicators is then indexed by dividing it by 50.

The Indexed EDEP for Operational Holdings is $32.61/50 = 0.652$.

The Indexed EDEP for credit accounts above 2 lakh is $21.79/50 = 0.436$

Steps for Estimating the Female/Male Estimated Earned Income Share or Index for Income:

Estimate the Scale Free Income Index separately for females and males by applying the Goal Posts listed in Table A.3 (without taking logs).

$$\text{Female Income Index is then estimated as } \frac{12561 - 100}{150000 - 100} = 0.083$$

$$\text{Male Income Index is then estimated as } \frac{29913 - 100}{150000 - 100} = 0.199$$

Contd...

Estimate the Equally Distributed Income Index by applying the formula

$$= \{[0.495 (0.083)^{-1}] + [0.505 (0.199)^{-1}]\}^{-1} = 0.165$$

Step 4: The Indexed EDEP values obtained above for all three indicators are added and divided by 3 or equal weights are given to all 3 indicators and the Indexed EDEP for 'Power over Economic Resources' is obtained as

$$(0.652 + 0.436 + 0.165)/3 = \mathbf{0.418}$$

Gender Empowerment Measure (GEM)

GEM is calculated as a simple average of the three Dimension Indices mentioned above, 'Political Participation and Decision-making Power', 'Economic Participation and Decision-making Power' and 'Power Over Economic Resources.'

$$\text{GEM for Andhra Pradesh in 2006} = 1/3(\mathbf{0.628} + \mathbf{0.597} + \mathbf{0.418}) = \mathbf{0.547}$$

Technical Notes

1. All the reported numbers are estimated figures (sub round multipliers are provided with the data and the method of computing the final multipliers is given in the layout) computed from the unit level data of NSSO 50th round (1993-94) and 61st round (2004-05) Employment and Unemployment Survey.

2. Methodology for computing Mean Years of Education (15+ age group)

For calculating Mean Years of Education the variable used is 'General Level of Education – col 7 of block 4'. Mean years of Education is calculated for population in the 15+ age group.

To compute the mean years of education, years of education has been recorded as follows:

- Illiterate - 0
- Literate below primary - 1
- Primary - 4
- Middle - 8
- Secondary - 10
- Higher Secondary - 12
- Diploma/Certificate course - 14
- Graduate - 15
- Postgraduate and above - 17

Distribution of male/female population according to completed education is estimated from the unit level data and a weighted average is taken to get Mean Years of Education (for 15+ age group).

3. Methodology for computing Workforce Participation Rate

Workforce Participation rates are computed for 5+ age group

Workforce Participation Rate = Distribution of UPSS Workers per 1000 population

Worker: Persons who were engaged in any economic activity or who, despite their attachment to economic activity (activity status codes 11 - 51), abstained from work for various reasons (activity status codes 61 - 72) are considered as workers.

UPSS: The usual status, determined on the basis of the usual principal activity and usual subsidiary economic activity of a person taken together, is considered as the usual activity status of the person and is written as usual status (ps+ss). According to the usual status (ps+ss), workers are those who perform some work activity either in the principal status or in the subsidiary status. Thus, a person who is not a worker in the usual principal status is considered as worker according to the usual status (ps+ss), if the person pursues some subsidiary economic activity for 30 days or more during 365 days preceding the date of survey.

Population and Persons thus classified as UPSS workers are estimated applying multipliers.

Data from levels 4, 5 (blocks 5.1 & 5.2 respectively) are used for computing UPSS workforce for the 50th round (for 1996) and 61st round (for 2006).

4. Methodology for Computing Wages

Wages reported are for Casual Labour (activity status codes 41, 51) and in current (2004-05) prices.

Data from level 6 – block 5.3 is used for computing wages. The variable 'status' is used to classify a person as casual labour, variable 'Wage & Salary Earnings-Total' is used to compute total wage received by a worker in a week and the variable 'Total no. of days in each activity' is used to compute number of days worked in a week.

Wage per day = total wage received/total days worked

Statistical Tables

List of Statistical Tables for HDI and GDI

Infant Mortality Rate, 1996 and 2006

Life Expectancy at age 1, 1992-1996 and 2002-06

7+ Literacy Rate, 1995-96 and 2005-06

Mean Years of Education 1993-94 and 2004-05

NSDP/NDP factor cost 1996 and 2006

Work Force Participation Rates and Wage Rates, 1993-94 and 2004-05

List of Statistical Tables for GEM

Performance of Candidates in Parliamentary Election, 1996, 2004

Performance of Candidates in State Assemblies, 1996, 2006

Elected Representatives in *Gram Panchayats* and *Zilla Parishads*, 1996, 2006

Candidates Contesting in Parliamentary Election in States (from Major National Parties), 1996 and 2004

Electors and Voters in Lok Sabha Elections, 1996 and 2004

Number of IAS, IPS and IFS Officials in Service, 1996 and 2006

Enrolment in M.B.B.S. and B.E./B.Sc.(Engg)/B.Arch., (Single Indicator) 1995-96 and 2004-05

Number of Operational Land Holdings During Agriculture Census, 1995-96 and 2000-01 (in '000)

Number of Credit Accounts for All Scheduled Commercial Banks in India as on 31st March, 1996 and 2006

Statistical Tables for Districts

Indicators and Source of Data used to Estimate HDI, GDI and GEM for the Districts

Statistical Tables for HDI and GDI for Mahbubnagar and Jodhpur

Statistical Tables for GEM for Mahbubnagar

Statistical Tables for HDI and GDI

Dimension 1: A Long and Healthy Life

Infant Mortality Rate, 1996

S.No.	States/Union Territories	Male	Female	Total
1	Andhra Pradesh	67	63	65
2	Arunachal Pradesh	39.2	37.9	38.6
3	Assam	73	77	74
4	Bihar	68	75	71
5	Goa	23.6	25.9	24.8
6	Gujarat	57	66	61
7	Haryana	67	70	68
8	Himachal Pradesh	57	70.5	63.3
9	Jammu & Kashmir ¹	..	..	..
10	Karnataka	55	52	53
11	Kerala	13	14	14
12	Madhya Pradesh	97	96	97
13	Maharashtra	50	47	48
14	Manipur	19.8	27.8	23.6
15	Meghalaya	44.7	50.5	47.7
16	Mizoram ²	..	..	..
17	Nagaland	0.1	70.4	32.8
18	Orissa	100	92	96
19	Punjab	47	57	51
20	Rajasthan	84	86	85
21	Sikkim	56	49.8	52.9
22	Tamil Nadu	54	53	53
23	Tripura	56.7	39.9	48.5
24	Uttar Pradesh	80	90	85
25	West Bengal	60	50	55
26	Chhattisgarh	86.0	85.3	85.8
27	Jharkhand	69.8	67.5	68.7
28	Uttarakhand	62.8	71.9	66.8
29	Andaman & Nicobar Islands	41.8	15.6	29.5
30	Chandigarh	29.1	24.6	27
31	Dadra & Nagar Haveli	59.6	54.4	57.2
32	Daman & Diu	83.3	26	60.6
33	Delhi	46.7	33.6	40.7
34	Lakshadweep	25.2	5.9	16.3
35	Puducherry	10.9	18.1	14.6
All India		71	73	72

Note: (i) .. Data Not Available (ii) ¹The value of Himachal Pradesh has been applied to Jammu & Kashmir. ²The average of the value for Assam, Manipur and Tripura has been applied to Mizoram.

Source: *Compendium of India's Fertility and Mortality Indicators 1971-1997, SRS, RGI 1999 & Office of the Registrar General of India, Ministry of Home Affairs.*

Infant Mortality Rate, 2006

S.No.	States/Union Territories	Male	Female	Total
1	Andhra Pradesh	55	58	56
2	Arunachal Pradesh	38	43	40
3	Assam	67	68	67
4	Bihar	58	63	60
5	Goa	16	14	15
6	Gujarat	52	54	53
7	Haryana	57	58	57
8	Himachal Pradesh	45	55	50
9	Jammu & Kashmir	51	53	52
10	Karnataka	46	50	48
11	Kerala	14	16	15
12	Madhya Pradesh	72	77	74
13	Maharashtra	35	36	35
14	Manipur	10	13	11
15	Meghalaya	53	52	53
16	Mizoram	24	25	25
17	Nagaland	17	23	20
18	Orissa	73	74	73
19	Punjab	39	50	44
20	Rajasthan	65	69	67
21	Sikkim	26	40	33
22	Tamil Nadu	36	37	37
23	Tripura	31	41	36
24	Uttar Pradesh	70	73	71
25	West Bengal	37	40	38
26	Chattisgarh	59	62	61
27	Jharkhand	46	52	49
28	Uttarakhand	42	44	43
29	Andaman & Nicobar Islands	27	36	31
30	Chandigarh	20	27	23
31	Dadra & Nagar Haveli	28	44	35
32	Daman & Diu	28	28	28
33	Delhi	36	39	37
34	Lakshadweep	29	21	25
35	Puducherry	20	36	28
All India		56	59	57

Source: Volume 42 No.1, 10/1/2007, SRS Bulletin, Sample Registration System, Registrar General, India, Vital Statistics Division, West Block 1, Wing 1, 2nd Floor, R.K. Puram, New Delhi-110066

Life Expectancy at age 1, 1992-1996

S.No.	States/Union Territories	Male	Female	Total
1	Andhra Pradesh	64.3	65.9	65.2
2	Arunachal Pradesh ³	..	..	..
3	Assam	60.6	61	60.6
4	Bihar	64	62	63.2
5	Goa ⁴	..	..	..
6	Gujarat	63.9	66.3	65.1
7	Haryana	66.9	68.4	67.6
8	Himachal Pradesh ¹	..	..	..
9	Jammu & Kashmir ²	..	..	..
10	Karnataka	64.9	68.1	66.6
11	Kerala	70.3	75.8	73.2
12	Madhya Pradesh	61.5	60.5	61.2
13	Maharashtra	66.8	68.9	68.1
14	Manipur ³	..	..	..
15	Meghalaya ³	..	..	..
16	Mizoram ³	..	..	..
17	Nagaland ³	..	..	..
18	Orissa	62.6	62.2	62.6
19	Punjab	69.2	72.2	70.5
20	Rajasthan	63.7	64.9	64.6
21	Sikkim ³	..	..	..
22	Tamil Nadu	65.1	67.3	66.1
23	Tripura ³	..	..	..
24	Uttar Pradesh	62.5	61.6	62.2
25	West Bengal	65.2	66.4	65.8
26	Chattisgarh ⁵	..	..	..
27	Jharkhand ⁶	..	..	..
28	Uttarakhand ⁷	..	..	..
29	Andaman & Nicobar Islands ⁸	..	..	..
30	Chandigarh ⁹	..	..	..
31	Dadra & Nagar Haveli ⁸	..	..	..
32	Daman & Diu ⁸	..	..	..
33	Delhi ¹⁰	..	..	..
34	Lakshadweep ⁸	..	..	..
35	Puducherry ¹¹	..	..	..
All India		64.3	65.6	64.9

Note: (i) .. Data Not Available (ii) ¹The average of the value for Punjab and Haryana has been applied to Himachal Pradesh. ²The all India average value has been applied to Jammu and Kashmir. ³The value of Assam has been applied to all North Eastern States, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. ⁴The average value of Karnataka and Maharashtra has been applied to Goa. ⁵The value of Madhya Pradesh has been applied to Chhattisgarh. ⁶The value of Bihar has been applied to Jharkhand. ⁷The value of Uttar Pradesh has been applied to Uttarakhand. ⁸The All India average value has been applied to the Union Territories, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, and Lakshadweep. ⁹The average value of Punjab and Haryana has been applied to Chandigarh. ¹⁰The average value of Haryana and Uttar Pradesh has been applied to Delhi. ¹¹The value of Tamil Nadu has been applied to Puducherry.

Source: *Compendium of India's Fertility and Mortality Indicators 1971-1997 based on the SRS, RGI, 1999.*

Life Expectancy at age 1, 2002-06

S.No.	States/Union Territories	Male	Female	Total
1	Andhra Pradesh	66.2	68.7	67.6
2	Arunachal Pradesh ²	..	..	..
3	Assam	62.5		
4	Bihar	64.9		
5	Goa ³	..		
6	Gujarat	65.8	68.7	67.2
7	Haryana	69.1	70.7	70
8	Himachal Pradesh	69.1	70.0	69.6
9	Jammu & Kashmir ¹	..	..	..
10	Karnataka	66.4	70.1	68.3
11	Kerala	71.2	76.2	73.9
12	Madhya Pradesh	62.5	62.6	62.6
13	Maharashtra	67.5	70.3	68.9
14	Manipur ²	..	..	..
15	Meghalaya ²	..	..	..
16	Mizoram ²	..	..	..
17	Nagaland ²	..	..	..
18	Orissa	63.7	63.6	63.6
19	Punjab	70.4	73.6	70
20	Rajasthan	65.9	66.9	66.5
21	Sikkim ²	..	..	..
22	Tamil Nadu	66.8	69.1	68
23	Tripura ²	64.5	64.1	64.4
24	Uttar Pradesh	66.2	67.6	66.9
25	West Bengal	..	..	..
26	Chhattisgarh ⁴	..	..	..
27	Jharkhand ⁵	..	..	..
28	Uttarakhand ⁶	..	..	..
29	Andaman & Nicobar Islands ⁷	..	..	..
30	Chandigarh ⁸	..	..	..
31	Dadra & Nagar Haveli ⁷	..	..	..
32	Daman & Diu ⁷	..	..	..
33	Delhi ⁹	..	..	..
34	Lakshadweep ⁷	..	..	..
35	Puducherry ¹⁰	..	..	..
All India		65.7	67.6	66.8

Note: (i) .. Data Not Available (ii) ¹The all India average value has been applied to Jammu and Kashmir. ²The value of Assam has been applied to all North Eastern States - Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. ³The average value of Karnataka and Maharashtra has been applied to Goa. ⁴The value of Madhya Pradesh has been applied to Chhattisgarh. ⁵The value of Bihar has been applied to Jharkhand. ⁶The value of Uttar Pradesh has been applied to Uttarakhand. ⁷The All India average value has been applied to the Union Territories of Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, and Lakshadweep. ⁸The average value of Punjab and Haryana has been applied to Chandigarh. ⁹The average value of Haryana and Uttar Pradesh has been applied to Delhi. ¹⁰The value of Tamil Nadu has been applied to Puducherry.

Source: SRS Based Abridged Life tables, 2002-06, Office of RGI, India

Dimension 2: Knowledge**7+ Literacy Rate, 1995-96 (percent)**

S.No.	States/Union Territories	Male	Female	Total
1	Andhra Pradesh	61	41	51
2	Arunachal Pradesh	56	45	51
3	Assam	81	65	73
4	Bihar	58	29	44
5	Goa	92	77	84
6	Gujarat	77	52	66
7	Haryana	72	50	62
8	Himachal Pradesh	80	62	71
9	Jammu & Kashmir	70	45	58
10	Karnataka	67	47	57
11	Kerala	94	88	91
12	Madhya Pradesh	65	37	52
13	Maharashtra	82	61	72
14	Manipur	78	58	68
15	Meghalaya	84	76	80
16	Mizoram	87	82	85
17	Nagaland	87	79	83
18	Orissa	68	45	57
19	Punjab	73	58	66
20	Rajasthan	65	29	48
21	Sikkim	83	67	75
22	Tamil Nadu	76	56	66
23	Tripura	83	68	76
24	Uttar Pradesh	63	34	50
25	West Bengal	76	56	66
26	Chattisgarh ¹	..	..	..
27	Jharkhand ²	..	..	..
28	Uttarakhand ³	..	..	..
29	Andaman & Nicobar Islands	88	73	82
30	Chandigarh	87	77	82
31	Dadra & Nagar Haveli	78	62	70
32	Daman & Diu	76	50	65
33	Delhi	89	77	83
34	Lakshadweep	99	78	87
35	Puducherry	85	68	77
All India		70	47	59

Note: (i) .. Data Not Available (ii) ¹The value of Madhya Pradesh has been used in place of Chhattisgarh. ²The value of Bihar has been used in place of Jharkhand. ³The value of Uttar Pradesh has been used in place of Uttarakhand

Source: NSSO 52nd Round (July 1995- June 1996)

7+ Literacy Rate, 2005-06 (percent)

S.No.	States/Union Territories	Male	Female	Total
1	Andhra Pradesh	68.6	50	59.1
2	Arunachal Pradesh ¹	..	..	..
3	Assam	88.9	77.9	83.6
4	Bihar	67.7	42.8	55.7
5	Goa	92.1	78.5	85.0
6	Gujarat	84.1	60.5	72.8
7	Haryana	80.3	60.2	70.8
8	Himachal Pradesh	87.4	72.6	79.9
9	Jammu & Kashmir	74.6	52.9	64.3
10	Karnataka	76.7	58.5	67.6
11	Kerala	95.1	88.6	91.7
12	Madhya Pradesh	75.9	52.4	64.7
13	Maharashtra	87.1	69.8	78.8
14	Manipur ¹	..	..	..
15	Meghalaya ¹	..	..	..
16	Mizoram ¹	..	..	..
17	Nagaland ¹	..	..	..
18	Orissa	74.5	52.8	63.6
19	Punjab	79.6	68.4	74.3
20	Rajasthan	71.1	41.7	57.0
21	Sikkim ¹	..	..	..
22	Tamil Nadu	84.1	67.8	75.8
23	Tripura ¹	..	..	..
24	Uttar Pradesh	74.1	49.4	62.4
25	West Bengal	80.3	64.6	72.7
26	Chattisgarh	68.6	48.3	58.4
27	Jharkhand	74.4	47.1	61.4
28	Uttarakhand	88.9	73.5	81.3
29	Andaman & Nicobar Islands ²	..	..	..
30	Chandigarh ²	..	..	..
31	Dadra & Nagar Haveli ²	..	..	..
32	Daman & Diu ²	..	..	..
33	Delhi	95	84.9	90.6
34	Lakshadweep ²	..	..	..
35	Puducherry ²	..	..	..
All India		78.1	58.1	68.3

Note: (i) .. Data Not Available (ii) ¹Data is given for group of North eastern States and ²Data is given for group of Union Territories. These values have been used for the individual States/UTs.

Source: NSSO 62nd Round (2005-06)

Mean Years of Education, 1993-94

S.No.	States/Union Territories	Male	Female	Total
1	Andhra Pradesh	3.7	1.7	2.7
2	Arunachal Pradesh	2.9	1.5	2.3
3	Assam	4.9	3.1	4.1
4	Bihar	4.0	1.2	2.7
5	Goa	7.0	5.0	6.0
6	Gujarat	5.0	2.9	4.0
7	Haryana	5.3	2.5	4.0
8	Himachal Pradesh	5.2	3.0	4.0
9	Jammu & Kashmir	5.5	3.3	4.4
10	Karnataka	4.7	2.6	3.7
11	Kerala	6.7	5.8	6.2
12	Madhya Pradesh	3.8	1.6	2.7
13	Maharashtra	5.8	3.4	4.7
14	Manipur	7.0	4.3	5.6
15	Meghalaya	3.9	2.8	3.4
16	Mizoram	6.4	5.2	5.8
17	Nagaland	7.4	5.1	6.4
18	Orissa	3.6	1.7	2.6
19	Punjab	5.0	3.6	4.3
20	Rajasthan	3.8	1.3	2.6
21	Sikkim	4.8	3.1	4.0
22	Tamil Nadu	5.0	3.0	4.0
23	Tripura	5.0	3.3	4.2
24	Uttar Pradesh	4.4	1.7	3.1
25	West Bengal	4.7	2.8	3.8
26	Chattisgarh ¹	..	..	..
27	Jharkhand ²	..	..	..
28	Uttarakhand ³	..	..	..
29	Andaman & Nicobar Islands	5.6	4.7	5.2
30	Chandigarh	7.4	6.7	7.1
31	Dadra & Nagar Haveli	3.6	1.5	2.5
32	Daman & Diu	6.4	4.1	5.3
33	Delhi	7.9	6.7	7.4
34	Lakshadweep	5.4	4.2	4.7
35	Puducherry	6.5	4.4	5.5
All India		4.6	2.5	3.6

Note: (i) .. Data Not Available (ii) ¹The value of Madhya Pradesh has been applied to Chhattisgarh. ²The value of Bihar has been applied to Jharkhand. ³The value of Uttar Pradesh has been applied to Uttarakhand.

Source: NSSO 50th Round (1993-94); calculated values

Mean Years of Education, 2004-05

S.No.	States/Union Territories	Male	Female	Total
1	Andhra Pradesh	4.9	2.8	3.8
2	Arunachal Pradesh	4.9	3.3	4.2
3	Assam	5.4	3.7	4.6
4	Bihar	4.7	1.8	3.3
5	Goa	8.2	6.4	7.3
6	Gujarat	6.4	4.2	5.3
7	Haryana	6.4	4.2	5.4
8	Himachal Pradesh	6.6	4.8	5.7
9	Jammu & Kashmir	5.9	3.7	4.9
10	Karnataka	5.7	3.9	4.8
11	Kerala	7.5	6.9	7.2
12	Madhya Pradesh	4.9	2.6	3.8
13	Maharashtra	7.1	4.9	6.1
14	Manipur	7.4	5.2	6.3
15	Meghalaya	4.9	4.3	4.6
16	Mizoram	7.3	6.3	6.8
17	Nagaland	7.9	6.3	7.1
18	Orissa	4.7	3.0	3.8
19	Punjab	6.2	5.3	5.7
20	Rajasthan	4.9	2.1	3.5
21	Sikkim	4.9	3.9	4.4
22	Tamil Nadu	6.3	4.4	5.3
23	Tripura	5.3	3.8	4.6
24	Uttar Pradesh	5.4	2.7	4.1
25	West Bengal	5.3	3.7	4.5
26	Chattisgarh	5.1	2.6	3.8
27	Jharkhand	5.0	2.3	3.7
28	Uttarakhand	7.0	4.5	5.7
29	Andaman & Nicobar Islands	6.8	6.0	6.4
30	Chandigarh	9.8	8.9	9.4
31	Dadra & Nagar Haveli	5.7	3.3	4.7
32	Daman & Diu	8.2	6.3	7.3
33	Delhi	9.2	7.5	8.4
34	Lakshadweep	6.1	4.8	5.5
35	Puducherry	7.6	5.2	6.3
All India		5.7	3.6	4.7

Source: NSSO 61st Round (2004-05); calculated values

Dimension 3: A Decent Standard of Living**NSDP/NDP at Factor Cost and Projected Population, 1996**

S.No.	States/Union Territories	NSDP/NDP factor cost 1996 at constant (1999-00) price (in Rs. Lakh)	State-wise Projected Population as on 1 st March, 1996 (in '000)		
			Male	Female	Total
1	Andhra Pradesh	9559822.67	36588	35567	72155
2	Arunachal Pradesh	144488.92	553	481	1034
3	Assam	2998775.53	12861	11866	24726
4	Bihar	3453615.39	48698	44357	93055
5	Goa	371723.16	704	687	1391
6	Gujarat	7474088.50	23546	22002	45548
7	Haryana	3700680.76	9948	8606	18554
8	Himachal Pradesh	926458.88	3009	2974	5983
9	Jammu & Kashmir	1122661.94	4593	4308	8901
10	Karnataka	6260703.72	25181	24164	49344
11	Kerala	4984434.71	15206	15759	30965
12	Madhya Pradesh	5492606.95	38412	35774	74185
13	Maharashtra	17390575.22	44782	41805	86587
14	Manipur	214309.80	1114	1076	2190
15	Meghalaya	242079.64	1076	1041	2117
16	Mizoram ¹	..	..	..	..
17	Nagaland	228836.43	767	687	1455
18	Orissa	3272731.57	17475	16965	34440
19	Punjab	4975614.90	11886	10481	22367
20	Rajasthan	5658526.69	26037	23687	49724
21	Sikkim	60537.40	257	229	485
22	Tamil Nadu	9567420.48	30119	29333	59452
23	Tripura	307723.85	1682	1607	3288
24	Uttar Pradesh	13206739.21	83393	73299	156692
25	West Bengal	9442924.94	38913	35688	74601
26	Chhattisgarh ²	..	..	..	..
27	Jharkhand ³	..	..	..	..
28	Uttarakhand ⁴	..	..	..	..
29	Andaman & Nicobar Islands	73001.03	183	152	335
30	Chandigarh	261826.06	427	342	770
31	Dadra & Nagar Haveli ⁵	..	84	81	165
32	Daman & Diu ⁵	..	61	60	121
33	Delhi	3496303.58	6363	5373	11736
34	Lakshadweep ⁵	..	32	30	62
35	Puducherry	138716.93	484	480	965
All India (NDP)		126042101.35	484859	449360	934218

Note: (i) .. Data Not Available (ii) ¹The value of Assam has been applied to Mizoram. ²The value of Madhya Pradesh has been applied to Chhattisgarh. ³The value of Bihar has been applied to Jharkhand. ⁴The value of Uttar Pradesh has been applied to Uttarakhand. ⁵The all-India average value has been applied to Dadra & Nagar Haveli, Daman & Diu and Lakshadweep.

Source: (a) Central Statistical Organization, (b) Population Projections for India and States 1996-2016, Census of India 1991, Report of the Technical Group on Population Projections Constituted by the Planning Commission, August 1996, Registrar General, India, Ministry of Home Affairs

NSDP/NDP at Factor Cost and Projected Population, 2006

S.No.	States/Union Territories	NSDP/NDP factor cost 2006 constant (1999-00) price (in Rs. Lakh)	State-wise Projected Population as on 1 st March, 2006 (in '000)		
			Male	Female	Total
1	Andhra Pradesh	17146200	40592	39838	80430
2	Arunachal Pradesh	213900	616	554	1170
3	Assam	4215000	14694	14045	29009
4	Bihar	6099400	47167	43663	90830
5	Goa	742100	782	754	1536
6	Gujarat	13926500	28528	26286	54814
7	Haryana	7572200	12373	10668	23041
8	Himachal Pradesh	1803700	3264	3161	6425
9	Jammu & Kashmir	1749700	6080	5523	11603
10	Karnataka	11683400	28527	27610	56137
11	Kerala	8575900	16313	17256	33569
12	Madhya Pradesh	8100600	34775	32026	66801
13	Maharashtra	29615500	54072	50032	104104
14	Manipur	452200	1295	1266	2561
15	Meghalaya	453700	1253	1220	2473
16	Mizoram ¹	..	493	462	955
17	Nagaland	456600	1117	1015	2132
18	Orissa	5416700	19791	19262	39053
19	Punjab	7649100	13842	12134	25976
20	Rajasthan	9062500	32452	29979	62431
21	Sikkim	119100	310	270	580
22	Tamil Nadu	15784200	32764	32497	65261
23	Tripura	729700	1755	1666	3421
24	Uttar Pradesh	19287600	96369	87487	183856
25	West Bengal	17304700	44244	41536	85780
26	Chhattisgarh	3714900	11526	11333	22859
27	Jharkhand	4294100	15012	14162	29174
28	Uttarakhand	1864500	4692	4523	9215
29	Andaman & Nicobar Islands	118400	211	183	394
30	Chandigarh	738900	571	442	1013
31	Dadra & Nagar Haveli ²	..	142	106	248
32	Daman & Diu ²	..	109	70	179
33	Delhi	7320000	8809	7256	16065
34	Lakshadweep ²	..	34	32	66
35	Puducherry	386400	522	519	1041
All India (NDP)		232658100	575096	538836	1114202

Note: (i) .. Data Not Available (ii) ¹The value of Assam has been applied to Mizoram, ²The All India average value has been applied to Dadra & Nagar Haveli, Daman & Diu and Lakshadweep.

Source: (a) Central Statistical Organization, (b) http://www.censusindia.gov.in/Census_Data_2001/Projected_Population/Projected_population.aspx

Work Force Participation Rates and Wages, 1993-94

S.No.	States/Union Territories	WFPR			Wage per day (Rs.) current prices		
		Male	Female	Total	Male	Female	Total
1	Andhra Pradesh	608	438	523	20.4	13.8	17.5
2	Arunachal Pradesh	499	373	440	32.0	23.3	30.0
3	Assam	517	152	350	27.3	21.3	26.0
4	Bihar	502	160	341	18.1	15.1	17.3
5	Goa	548	241	392	41.4	19.9	34.7
6	Gujarat	561	313	442	24.2	19.3	22.6
7	Haryana	477	241	367	36.7	26.0	34.2
8	Himachal Pradesh	580	497	537	33.6	34.0	33.6
9	Jammu & Kashmir	512	333	424	36.1	20.7	35.2
10	Karnataka	586	360	474	21.7	14.1	18.6
11	Kerala	542	230	380	46.9	26.9	42.1
12	Madhya Pradesh	548	349	453	19.1	14.6	17.5
13	Maharashtra	541	365	455	21.9	12.6	17.5
14	Manipur	465	285	376	40.8	30.0	38.9
15	Meghalaya	603	451	528	32.5	24.7	29.9
16	Mizoram	515	300	413	51.8	39.4	51.1
17	Nagaland ⁴	421	188	314	42.3	..	42.3
18	Orissa	559	297	429	17.4	12.6	16.0
19	Punjab	548	183	376	42.7	34.7	42.0
20	Rajasthan	528	391	463	29.2	20.8	27.2
21	Sikkim	564	187	396	29.9	22.7	28.6
22	Tamil Nadu	592	391	491	27.2	15.0	22.2
23	Tripura	519	128	330	34.4	19.1	31.7
24	Uttar Pradesh	514	196	364	24.8	16.9	23.4
25	West Bengal	556	176	373	24.6	18.2	23.4
26	Chhattisgarh ¹	..	..	..	..	..	..
27	Jharkhand ²	..	..	..	..	..	..
28	Uttarakhand ³	..	..	..	..	..	..
29	Andaman & Nicobar Islands	603	363	490	38.7	30.1	37.4
30	Chandigarh	622	157	414	42.2	33.6	40.5
31	Dadra & Nagar Haveli	559	522	541	25.8	18.0	23.6
32	Daman & Diu	567	213	393	41.0	24.9	37.7
33	Delhi	544	96	353	48.2	43.0	47.2
34	Lakshadweep	474	110	279	47.8	30.0	45.9
35	Puducherry	515	211	365	30.1	21.8	27.7
All India		545	286	420	24.4	15.5	21.5

Note: (i) .. Data Not Available (ii) ¹The value of Madhya Pradesh has been used in place of Chhattisgarh. ²The value of Bihar has been used in place of Jharkhand. ³The value of Uttar Pradesh has been used in place of Uttarakhand. ⁴The value for wage for Assam has been applied to Nagaland.

Source: 1. Computed from NSSO unit records NSSO 50th round, 1993-94,
2. Wages reported are for Casual Labourers and in current prices

Work Force Participation Rates and Wages, 2004-05

S.No.	States/Union Territories	WFPR			Wage per day (Rs.) current prices		
		Male	Female	Total	Male	Female	Total
1	Andhra Pradesh	594	416	505	51.7	31.0	43.2
2	Arunachal Pradesh	495	379	441	87.2	58.7	78.5
3	Assam	551	199	385	62.8	53.2	60.4
4	Bihar	475	132	312	45.6	38.7	44.4
5	Goa	528	188	350	108.1	67.7	99.4
6	Gujarat	588	337	468	56.0	43.3	52.0
7	Haryana	519	269	401	75.4	57.5	72.1
8	Himachal Pradesh	562	485	524	85.0	64.0	83.0
9	Jammu & Kashmir	545	228	394	99.5	56.6	96.7
10	Karnataka	608	374	493	53.2	31.7	45.0
11	Kerala	556	243	393	134.4	65.9	120.0
12	Madhya Pradesh	539	316	433	40.5	31.1	37.4
13	Maharashtra	564	361	466	54.1	29.2	43.3
14	Manipur	508	318	415	79.5	94.1	82.0
15	Meghalaya	557	452	504	73.0	42.5	63.8
16	Mizoram	551	375	466	115.1	105.6	113.7
17	Nagaland	519	429	476	107.0	75.6	96.4
18	Orissa	574	299	436	42.6	30.0	38.8
19	Punjab	556	262	416	75.8	51.8	73.5
20	Rajasthan	509	354	433	64.0	50.2	61.0
21	Sikkim	553	301	434	90.6	73.9	87.7
22	Tamil Nadu	596	377	486	72.4	37.3	58.7
23	Tripura	543	87	320	64.8	43.8	62.0
24	Uttar Pradesh	501	216	363	54.3	39.1	52.0
25	West Bengal	579	172	380	51.5	38.6	49.6
26	Chhattisgarh	559	414	486	38.6	29.0	34.8
27	Jharkhand	524	283	407	51.5	39.9	48.7
28	Uttarakhand	522	357	439	68.9	56.5	67.2
29	Andaman & Nicobar Islands	612	212	420	95.7	67.1	91.1
30	Chandigarh ¹	523	134	348	92.8	..	92.8
31	Dadra & Nagar Haveli	561	445	509	61.8	53.5	58.3
32	Daman & Diu	610	192	407	82.1	58.2	74.9
33	Delhi	534	85	332	81.8	47.9	77.2
34	Lakshadweep	532	81	327	133.7	44.8	130.0
35	Puducherry	547	230	386	81.4	42.6	72.0
All India		547	287	420	57.4	35.5	50.9

Note: (i) .. Data Not Available (ii) ¹The value of female wage for Punjab has been applied to the female wage for Chandigarh.

Source: 1. Computed from NSSO unit records, NSSO 61st Round 2004-05

2. Wages reported are for Casual Labourers and in current prices

Statistical Tables for GEM

GEM Dimension 1: Political Participation and Decision-making

Performance of Candidates in Parliamentary Election, 1996

S.No.	States/Union Territories	No. of Seats	Elected	
			Female	Male
1	Andhra Pradesh	42	3	39
2	Arunachal Pradesh	2	0	2
3	Assam	14	1	13
4	Bihar	54	3	51
5	Goa	2	0	2
6	Gujarat	26	2	24
7	Haryana	10	1	9
8	Himachal Pradesh	4	0	4
9	Jammu & Kashmir	6	0	6
10	Karnataka	28	1	27
11	Kerala	20	0	20
12	Madhya Pradesh	40	5	35
13	Maharashtra	48	2	46
14	Manipur	2	0	2
15	Meghalaya	2	0	2
16	Mizoram	1	0	1
17	Nagaland	1	0	1
18	Orissa	21	2	19
19	Punjab	13	1	12
20	Rajasthan	25	4	21
21	Sikkim	1	0	1
22	Tamil Nadu	39	0	39
23	Tripura	2	0	2
24	Uttar Pradesh	85	9	76
25	West Bengal	42	4	38
26	Chhattisgarh	..	..	..
27	Jharkhand	..	..	..
28	Uttarakhand	..	..	..
29	Andaman & Nicobar Islands	1	0	1
30	Chandigarh	1	0	1
31	Dadra & Nagar Haveli	1	0	1
32	Daman & Diu	1	0	1
33	NCT Delhi	7	2	5
34	Lakshadweep	1	0	1
35	Puducherry	1	0	1
All India		543	40	503

Note: (i) .. Data Not Available. No data for Chhattisgarh, Jharkhand and Uttarakhand as these were new states. For Chhattisgarh the value of Madhya Pradesh, for Jharkhand the value of Bihar and for Uttarakhand value of Uttar Pradesh has been taken.

Source: Election Commission of India.

Performance of Candidates in Parliamentary Election, 2004

S.No.	States/Union Territories	No. of Seats	Elected	
			Female	Male
1	Andhra Pradesh	42	3	39
2	Arunachal Pradesh	2	0	2
3	Assam	14	0	14
4	Bihar	40	3	37
5	Goa	2	0	2
6	Gujarat	26	1	25
7	Haryana	10	1	9
8	Himachal Pradesh	4	1	3
9	Jammu & Kashmir	6	1	5
10	Karnataka	28	2	26
11	Kerala	20	2	18
12	Madhya Pradesh	29	2	27
13	Maharashtra	48	5	43
14	Manipur	2	0	2
15	Meghalaya	2	0	2
16	Mizoram	1	0	1
17	Nagaland	1	0	1
18	Orissa	21	2	19
19	Punjab	13	2	11
20	Rajasthan	25	2	23
21	Sikkim	1	0	1
22	Tamil Nadu	39	4	35
23	Tripura	2	0	2
24	Uttar Pradesh	80	7	73
25	West Bengal	42	4	38
26	Chhattisgarh	11	1	10
27	Jharkhand	14	1	13
28	Uttarakhand	5	0	5
29	Andaman & Nicobar Islands	1	0	1
30	Chandigarh	1	0	1
31	Dadra & Nagar Haveli	1	0	1
32	Daman & Diu	1	0	1
33	NCT Delhi	7	1	6
34	Lakshadweep	1	0	1
35	Puducherry	1	0	1
All India		543	45	498

Source: Election Commission of India

Performance of Candidates in State Assemblies, 1996

S. No.	States/Union Territories	Elected	
		Female	Male
1	Andhra Pradesh, 1994	8	286
2	Arunachal Pradesh, 1995	1	59
3	Assam, 1996	6	116
4	Bihar, 1995	11	313
5	Goa, 1994	4	36
6	Gujarat, 1995	2	180
7	Haryana, 1996	4	86
8	Himachal Pradesh, 1993	3	65
9	Jammu & Kashmir, 1996	2	85
10	Karnataka, 1994	7	217
11	Kerala, 1996	13	127
12	Madhya Pradesh, 1993	12	308
13	Maharashtra, 1995	11	277
14	Manipur, 1995	0	60
15	Meghalaya, 1993	1	59
16	Mizoram, 1993	0	40
17	Nagaland, 1993	0	60
18	Orissa, 1995	8	139
19	Punjab, 1997	7	110
20	Rajasthan, 1993	9	190
21	Sikkim, 1994	1	31
22	Tamil Nadu, 1996	9	225
23	Tripura, 1993	1	59
24	Uttar Pradesh, 1993	14	408
25	West Bengal, 1996	20	274
26	Chhattisgarh	..	..
27	Jharkhand	..	..
28	Uttarakhand	..	..
29	Andaman & Nicobar Islands	..	..
30	Chandigarh	..	..
31	Dadra & Nagar Haveli	..	..
32	Daman & Diu	..	..
33	Delhi, 1993	3	67
34	Lakshadweep	..	..
35	Puducherry, 1996	1	29
All India		158	3906

Note: (i) .. Data Not Available. No data for Chhattisgarh, Jharkhand and Uttarakhand as they were new states. For Chhattisgarh the value of Madhya Pradesh, for Jharkhand the value of Bihar and for Uttarakhand the value of Uttar Pradesh has been taken. (ii) Data pertaining to elections to State assemblies is for the year nearest to 1996 as elections were held in different years nearest to 1996. (iii) For Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu and Lakshadweep this indicator was not considered for calculation.

Source: Election Commission of India

Performance of Candidates in State Assemblies, 2006

S.No.	States/Union Territories	Elected	
		Female	Male
1	Andhra Pradesh, 2004	26	268
2	Arunachal Pradesh, 1999	1	59
3	Assam, 2006	13	113
4	Bihar, 2005	25	218
5	Goa, 2002	1	39
6	Gujarat, 2002	12	170
7	Haryana, 2005	11	79
8	Himachal Pradesh, 2003	4	64
9	Jammu & Kashmir, 2002	2	85
10	Karnataka, 2004	6	218
11	Kerala, 2006	7	133
12	Madhya Pradesh, 2003	19	211
13	Maharashtra, 2004	12	276
14	Manipur, 2002	1	59
15	Meghalaya, 2003	2	58
16	Mizoram, 2003	0	40
17	Nagaland, 2003	0	60
18	Orissa, 2004	11	136
19	Punjab, 2002	8	109
20	Rajasthan, 2003	12	188
21	Sikkim, 2004	3	29
22	Tamil Nadu, 2006	22	212
23	Tripura, 2003	2	58
24	Uttar Pradesh, 2002	26	377
25	West Bengal, 2006	37	257
26	Chhattisgarh, 2003	5	85
27	Jharkhand, 2005	3	78
28	Uttarakhand, 2002	4	66
29	Andaman & Nicobar Islands	..	..
30	Chandigarh	..	..
31	Dadra & Nagar Haveli	..	..
32	Daman & Diu	..	..
33	Delhi, 2003	7	63
34	Lakshadweep	..	..
35	Puducherry, 2006	0	30
All India		282	3838

Note: (i) .. Data Not Available. (ii) Data pertaining to elections to state assemblies is for the year nearest to 2006 as elections were held in different years nearest to 2006. (iii) For Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu and Lakshadweep this indicator was not considered for calculation.

Source: Election Commission of India.

Elected Representatives in Gram Panchayats and Zilla Parishads, 1996

S.No.	States/Union Territories	Gram Panchayats				Zilla Parishads			
		Number	T	F	M	Number	T	F	M
1	Andhra Pradesh, 1995	21943	230529	78000	152529	22	1093	363	730
2	Arunachal Pradesh, 1992	2012	5733	66	5667	12	77	..	..
3	Assam, 1992	2489	24860	7458	17402	21	..	..	..
4	Bihar, No election after 1980	12181	..	..	..	55	..	..	..
5	Goa, 1997	183	1281	468	813	2	50	..	..
6	Gujarat, 1995	13316	123470	41180	82290	19	761	254	507
7	Haryana, 1994	5958	54159	17928	36231	16	303	101	202
8	Himachal Pradesh, 1994	2922	18258	6013	12245	12	252	84	168
9	Jammu & Kashmir, No election after 1974	2683	..	..	..	14	..	..	..
10	Karnataka, 1993	5675	80627	35305	45322	20	919	335	584
11	Kerala, 1995	991	10270	3383	6887	14	300	104	196
12	Madhya Pradesh, 1994	30922	474351	156181	318170	45	946	319	627
13	Maharashtra, 1997	27619	303545	100182	203363	29	1762	587	1175
14	Manipur, 1997	166	1556	576	980	3	61	22	39
15	Meghalaya	..	..	..	..	..	..	..	..
16	Mizoram	..	..	..	..	..	..	..	..
17	Nagaland	..	..	..	..	..	..	..	..
18	Orissa, 1997	5261	81077	28595	52482	30	854	294	560
19	Punjab, 1998	12369	87842	31053	56789	17	274	89	185
20	Rajasthan, 1995	9185	119419	38791	80628	31	997	331	666
21	Sikkim, 1997	159	883	87	796	4	92	28	64
22	Tamil Nadu, 1996	12607	97398	32795	64603	28	648	225	423
23	Tripura, 1999	538	5685	1895	3790	4	82	28	54
24	Uttar Pradesh, 1996	58805	682670	174410	508260	83	2551	648	1903
25	West Bengal, 1998	3330	50345	17907	32438	17	723	246	477
26	Chhattisgarh	..	..	..	..	..	..	..	..
27	Jharkhand	..	..	..	..	..	..	..	..
28	Uttarakhand	..	..	..	..	..	..	..	..
29	Andaman & Nicobar Islands, 1995	67	692	261	431	1	30	10	20
30	Chandigarh, 1994	17	109	22	87	1	10	3	7
31	Dadra & Nagar Haveli, 1995	11	135	46	89	1	16	4	12
32	Daman & Diu, 1995	10	63	35	28	2	15	5	10
33	Delhi	..	..	..	..	..	..	..	..
34	Lakshadweep, 1997	10	79	30	49	1	22	8	14
35	Puducherry, No election after 1978	..	..	..	..	10	..	..	..
All India		231429	2455036	772667	1682369	514	12838	4088	8623

Note: (i) .. Data Not Available. (ii) Data for M.P. used for Chhattisgarh; Data for U.P. used for Uttarakhand. Except these, wherever data is not available, the indicator has not been considered in the calculation

Source: *Reviving Democracy: The Emerging Role of Women in Decision Making, A Study of Women's Participation in Governance in South Asia*, 2003.

Elected Representatives in *Gram Panchayats* and *Zilla Parishads*, 2006

S. No.	States/Union Territories	Gram Panchayats				Zilla Parishads			
		Number	T	F	M	Number	T	F	M
1	Andhra Pradesh	21807	225276	80518	144758	22	1097	368	729
2	Arunachal Pradesh	1646	7415	2561	4854	14	136	45	91
3	Assam	2196	22898	8977	13921	20	390	135	255
4	Bihar	8463	124339	58044	66295	38	1162	568	594
5	Goa	189	1509	513	996	2	50	20	30
6	Gujarat	13693	109209	36400	72809	25	819	274	545
7	Haryana	6187	66588	24406	42182	19	384	135	249
8	Himachal Pradesh	3243	22654	8864	13790	12	251	92	159
9	Jammu & Kashmir	..	..	..	..	..	..	..	..
10	Karnataka	5628	90748	39318	51430	29	1003	373	630
11	Kerala	999	16139	5701	10438	14	343	119	224
12	Madhya Pradesh	23051	388829	134368	254461	48	855	304	551
13	Maharashtra	27893	223857	74620	149237	33	1961	654	1307
14	Manipur	165	1675	859	816	4	61	22	39
15	Meghalaya	..	..	..	..	..	..	..	..
16	Mizoram	..	..	..	..	..	..	..	..
17	Nagaland	..	..	..	..	..	..	..	..
18	Orissa*	6234	93781	33602	60179	30	854	296	558
19	Punjab	12447	88136	30875	57261	20	196	64	132
20	Rajasthan	9188	113437	40044	73393	32	1008	377	631
21	Sikkim	166	905	352	553	4	100	32	68
22	Tamil Nadu	12618	109308	36824	72484	28	656	227	429
23	Tripura	513	5352	1852	3500	4	82	28	54
24	Uttar Pradesh	52000	703294	273229	430065	70	2698	1122	1576
25	West Bengal	3354	49545	18150	31395	18	720	248	472
26	Chhattisgarh	9820	157250	53145	104105	16	305	103	202
27	Jharkhand	4562	..	..	..	22	..	..	..
28	Uttarakhand	7227	53988	20319	33669	13	360	126	234
29	Andaman & Nicobar Islands	67	758	261	497	1	30	10	20
30	Chandigarh	17	104	34	70	1	6	1	5
31	Dadra & Nagar Haveli	11	114	45	69	1	11	4	7
32	Daman & Diu	14	77	30	47	1	20	7	13
33	Delhi	..	..	..	..	..	..	..	..
34	Lakshadweep	10	85	32	53	1	25	9	16
35	Puducherry	98	913	330	583	1	..	..	..
All India		233506	2678183	984273	1693910	543	15583	5763	9820

Note: (i) .. Data Not Available. (ii) Data for Bihar used for Jharkhand. Except these, wherever data is not available, the indicator has not been considered in the calculation. (iii) *2002 election data (2007 election data is not available), (iv) Meghalaya, Mizoram & Nagaland have traditional Councils, (v) J&K has not adopted the Constitutional 73rd Amendment Act 1992, (vi) In Jharkhand, elections to the Rural Local Bodies have not been conducted so far and (vii) NCT of Delhi-Panchayati Raj System is to be revived.

Source: *The State of Panchayats: 2007-08, Volume Three: Supplementary*, pp 336.

**Candidates Contesting in Parliamentary Election in States
(from Major National Parties), 1996**

S.No.	States/Union Territories	AIIC(T)		BJP		CPI		CPM		INC		JD		JP		SAP	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1	Andhra Pradesh	25	0	38	1	3	0	2	1	38	4	0	0	8	0	2	0
2	Arunachal Pradesh	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0
3	Assam	11	1	13	1	0	0	2	0	12	2	5	0	0	0	0	0
4	Bihar	38	1	30	2	7	0	3	0	46	8	41	3	2	0	20	0
5	Goa	0	0	2	0	1	0	0	0	2	0	0	0	0	0	0	0
6	Gujarat	19	0	25	1	1	0	1	0	25	1	13	2	0	0	10	0
7	Haryana	7	1	6	0	1	0	0	0	9	1	8	0	6	0	9	1
8	Himachal Pradesh	2	0	4	0	1	0	1	0	4	0	1	0	1	0	1	0
9	Jammu & Kashmir	3	0	3	2	0	0	0	0	6	0	5	0	0	0	0	0
10	Karnataka	8	0	28	0	1	0	1	0	26	2	26	1	5	0	0	0
11	Kerala	0	0	17	1	4	0	9	0	16	1	1	1	5	1	1	0
12	Madhya Pradesh	31	2	35	4	3	1	1	0	35	5	8	0	7	0	3	1
13	Maharashtra	32	1	23	2	3	0	3	0	45	3	12	0	15	2	6	1
14	Manipur	1	1	2	0	1	0	0	0	2	0	1	0	0	0	1	1
15	Meghalaya	0	0	1	1	2	0	0	0	2	0	0	0	0	0	0	0
16	Mizoram	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
17	Nagaland	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
18	Orissa	6	2	19	1	1	0	1	0	19	2	18	1	5	0	2	0
19	Punjab	7	0	6	0	2	1	3	0	10	3	1	0	1	0	0	0
20	Rajasthan	14	3	23	2	1	0	1	0	23	2	13	1	0	0	6	0
21	Sikkim	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Tamil Nadu	12	0	37	0	2	0	7	0	28	1	8	0	2	0	5	0
23	Tripura	0	1	2	0	0	0	2	0	2	0	1	0	0	0	0	0
24	Uttar Pradesh	69	7	78	5	3	0	2	1	77	8	15	2	31	1	3	0
25	West Bengal	5	2	39	3	2	1	28	3	37	5	1	0	0	0	4	0
26	Chhattisgarh	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	Jharkhand	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	Uttarakhand	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	Andaman & Nicobar Islands	0	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0
30	Chandigarh	1	0	1	0	0	0	1	0	1	0	1	0	1	0	1	0
31	Dadra & Nagar Haveli	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
32	Daman & Diu	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
33	NCT Delhi	7	0	6	1	1	0	1	0	6	1	5	0	6	0	3	0
34	Lakshadweep	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
35	Puducherry	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0
All India		299	22	444	27	40	3	70	5	480	49	185	11	97	4	77	4

Note: (i) .. Data Not Available. (ii) Data for M.P. used for Chhattisgarh; Data for U.P. used for Uttarakhand; Data for Bihar used for Jharkhand.

Source: Election Commission of India.

**Candidates Contesting in Parliamentary Election in States
(from Major National Parties), 2004**

S.No.	States/Union Territories	BJP		BSP		CPI		CPM		INC		NCP	
		M	F	M	F	M	F	M	F	M	F	M	F
1	Andhra Pradesh	9	0	24	2	1	0	1	0	29	5	0	0
2	Arunachal Pradesh	2	0	0	0	0	0	0	0	1	0	0	0
3	Assam	11	1	0	0	1	0	2	0	13	1	0	0
4	Bihar	16	0	40	0	6	0	1	0	2	2	1	0
5	Goa	2	0	0	0	2	0	0	0	1	0	1	0
6	Gujarat	22	4	19	1	0	0	1	0	24	1	1	0
7	Haryana	9	1	9	1	0	0	0	0	9	1	0	0
8	Himachal Pradesh	4	0	4	0	0	0	0	0	3	1	0	0
9	Jammu & Kashmir	6	0	3	0	0	0	1	0	3	0	0	0
10	Karnataka	2	31	9	0	0	0	0	0	26	2	0	0
11	Kerala	18	1	14	0	4	0	11	2	14	3	0	0
12	Madhya Pradesh	26	3	26	2	2	0	1	0	25	4	0	1
13	Maharashtra	24	2	43	3	1	0	3	0	24	2	16	2
14	Manipur	2	0	0	0	1	0	0	0	1	0	1	0
15	Meghalaya	1	0	0	0	0	0	0	0	2	0	0	0
16	Mizoram	0	0	0	0	0	0	0	0	0	0	0	0
17	Nagaland	0	0	0	0	0	0	0	0	1	0	0	0
18	Orissa	8	1	1	20	0	0	0	0	18	3	0	0
19	Punjab	3	0	1	30	0	1	1	0	7	4	0	0
20	Rajasthan	21	4	22	2	1	1	2	0	24	1	2	0
21	Sikkim	0	0	0	0	0	0	0	0	1	0	0	0
22	Tamil Nadu	6	0	2	91	2	0	2	0	9	1	0	0
23	Tripura	1	0	0	0	0	0	2	0	2	0	0	0
24	Uttar Pradesh	72	5	76	4	6	0	1	1	67	6	4	0
25	West Bengal	13	0	32	4	3	0	27	5	33	4	0	1
26	Chhattisgarh	10	1	11	0	1	0	1	0	10	1	0	0
27	Jharkhand	12	2	14	0	1	0	1	0	8	1	0	0
28	Uttarakhand	5	0	3	0	0	0	1	0	4	1	0	0
29	Andaman & Nicobar Islands	1	0	1	0	0	0	1	0	1	0	0	1
30	Chandigarh	1	0	1	0	0	0	0	0	1	0	0	0
31	Dadra & Nagar Haveli	1	0	1	0	0	0	1	0	1	0	1	0
32	Daman & Diu	1	0	1	0	0	0	0	0	1	0	0	0
33	NCT Delhi	5	2	7	0	0	0	0	0	6	1	0	0
34	Lakshadweep	0	0	0	0	0	0	0	0	1	0	0	0
35	Puducherry	0	1	1	0	0	0	0	0	0	0	0	0
All India		335	29	415	20	32	2	61	8	372	45	27	5

Source: Election Commission of India

Electors and Voters in Lok Sabha Elections, 1996

S.No.	States/Union Territories	No. of Seats	No. of Electors			Voters		
			Men	Women	Total	Men	Women	Total
1	Andhra Pradesh	42	24735268	24766006	49501274	16434650	14762029	31196679
2	Arunachal Pradesh	2	288673	255767	544440	165340	134340	299680
3	Assam	14	6670161	5917498	12587659	5356995	4523994	9880989
4	Bihar	54	31012536	27425781	58438317	20921264	13822823	34744087
5	Goa	2	437202	431891	869093	262737	226810	489547
6	Gujarat	26	14666698	13862396	28529094	6140196	4108454	10248650
7	Haryana	10	6005913	5146943	11152856	4321738	3539125	7860863
8	Himachal Pradesh	4	1776034	1760483	3536517	1050171	986270	2036441
9	Jammu & Kashmir	6	2378717	2076992	4455709	1369602	811992	2181594
10	Karnataka	28	16147681	15662388	31810069	10460509	8694923	19155432
11	Kerala	20	10042379	10631488	20673867	7222521	7478493	14701014
12	Madhya Pradesh	40	22711323	21215929	43927252	13782881	9965441	23748322
13	Maharashtra	48	28669222	26585192	55254414	16328826	12650195	28979021
14	Manipur	2	641232	649758	1290990	489436	479347	968783
15	Meghalaya	2	550148	542605	1092753	342326	331046	673372
16	Mizoram	1	203746	204348	408094	148543	151050	299593
17	Nagaland	1	457901	416617	874518	416305	356097	772402
18	Orissa	21	11764783	10654335	22419118	7461632	5816065	13277697
19	Punjab	13	7634481	6855344	14489825	4829957	4189345	9019302
20	Rajasthan	25	16036429	14351928	30388357	7919653	5268669	13188322
21	Sikkim	1	119757	109403	229160	96634	80806	177440
22	Tamil Nadu	39	21397687	21090335	42488022	14762574	13676311	28438885
23	Tripura	2	844205	803703	1647908	680462	622886	1303348
24	Uttar Pradesh	85	55226430	45599875	100826305	28174821	18710813	46885634
25	West Bengal	42	23998543	21584511	45583054	20223207	17453935	37677142
26	Chhattisgarh	..	..	..	..	..	..	..
27	Jharkhand	..	..	..	..	..	..	..
28	Uttarakhand	..	..	..	..	..	..	..
29	Andaman & Nicobar Islands	1	120578	90648	211226	75536	55382	130918
30	Chandigarh	1	255580	195019	450599	148822	114367	263189
31	Dadra & Nagar Haveli	1	49806	45103	94909	37400	35632	73032
32	Daman & Diu	1	36527	33675	70202	24181	25425	49606
33	NCT Delhi	7	4597944	3460997	8058941	2376319	1702977	4079296
34	Lakshadweep	1	17690	16421	34111	15373	15000	30373
35	Puducherry	1	320502	313133	633635	239146	238291	477437
All India		543	309815776	282756512	592572288	192279757	151028333	343308090

Note: (i) .. Data Not Available. (ii) number of men voters is calculated by subtracting women voters from total number of voters. (iii) No data for Chhattisgarh, Jharkhand and Uttarakhand as these were new states. For Chhattisgarh value of Madhya Pradesh, for Jharkhand value of Bihar and for Uttarakhand value of Uttar Pradesh has been taken.

Source: Election Commission of India.

Electors and Voters in Lok Sabha Elections, 2004

S.No.	States/Union Territories	No. of Seats	No. of Electors		Voters	
			Men	Women	Men	Women
1	Andhra Pradesh	42	25355118	25791224	18391831	17384444
2	Arunachal Pradesh	2	351564	332470	201537	183909
3	Assam	14	7821591	7193283	5675644	4701710
4	Bihar	40	27053408	23506264	17197393	12134913
5	Goa	2	475847	465320	288171	264934
6	Gujarat	26	17341760	16333302	8670077	6543424
7	Haryana	10	6660631	5659926	4542703	3554361
8	Himachal Pradesh	4	2128828	2053167	1285155	1211994
9	Jammu & Kashmir	6	3468235	2899880	1400240	841489
10	Karnataka	28	19605257	18986838	13176603	11962519
11	Kerala	20	10168428	10957045	7526631	7567329
12	Madhya Pradesh	29	20028161	18361940	11339171	7124280
13	Maharashtra	48	32788476	30223732	18999569	15263748
14	Manipur	2	746054	790456	522862	512834
15	Meghalaya	2	648654	640720	302196	377125
16	Mizoram	1	273454	276505	179799	170000
17	Nagaland	1	547114	494319	509688	446002
18	Orissa	21	13191691	12460298	9015687	7929405
19	Punjab	13	8652294	7963105	5438507	4794658
20	Rajasthan	25	18149028	16563357	10055980	7290569
21	Sikkim	1	145738	136199	116879	102890
22	Tamil Nadu	39	23269301	23982970	15090157	13642797
23	Tripura	2	1023368	954854	722548	604452
24	Uttar Pradesh	80	60328608	50295882	32557624	20720447
25	West Bengal	42	24798089	22639342	19955108	17066370
26	Chhattisgarh	11	6904742	6814700	4045362	3100827
27	Jharkhand	14	8914164	7898175	5561577	3801786
28	Uttarakhand	5	2838204	2724433	1475915	1197917
29	Andaman & Nicobar Islands	1	131502	110143	83557	70284
30	Chandigarh	1	292438	235246	151963	117886
31	Dadra & Nagar Haveli	1	65059	57622	43799	40904
32	Daman & Diu	1	39595	39637	25840	29751
33	NCT Delhi	7	4953925	3809550	2428499	1697944
34	Lakshadweep	1	19880	19153	15698	16122
35	Puducherry	1	310658	326009	240134	244202
All India		543	349490864	321997066	217234104	172714226

Note: Number of men voters is calculated by subtracting women voters from total number of voters.

Source: Election Commission of India.

GEM Dimension 2: Economic Participation and Decision-making Power**Number of IAS, IPS and IFS Officials in Service, 1996**

S. No.	States/Union Territories	IAS			IPS			IFS		
		M	F	T	M	F	T	M	F	T
1	Andhra Pradesh	296	30	326	168	5	173	114	5	119
2	Arunachal Pradesh, Goa, Mizoram and Union Territories (AGMUTs)	207	35	242	129	6	135	108	3	111
3	Assam & Meghalaya (AM)	200	11	211	118	1	119	88	2	90
4	Bihar	336	34	370	208	7	215	33	0	33
5	Goa	(AGMUTs in 2 above)								
6	Gujarat	211	21	232	124	3	127	88	0	88
7	Haryana	169	29	198	93	1	94	53	2	55
8	Himachal Pradesh	113	17	130	65	0	65	82	3	85
9	Jammu & Kashmir	112	4	116	70	1	71	71	1	72
10	Karnataka	225	35	260	128	4	132	126	9	135
11	Kerala	146	16	162	97	3	100	65	2	67
12	Madhya Pradesh	347	44	391	263	6	269	206	9	215
13	Maharashtra	327	37	364	187	4	191	134	4	138
14	Manipur & Tripura (MT)	156	3	159	92	1	93	71	1	72
15	Meghalaya	(AM in 3 above)								
16	Mizoram	(AGMUTs in 2 above)								
17	Nagaland	43	1	44	36	0	36	24	0	24
18	Orissa	190	12	202	118	2	120	96	4	100
19	Punjab	167	29	196	117	1	118	32	0	32
20	Rajasthan	221	27	248	111	0	111	83	4	87
21	Sikkim	35	6	41	21	0	21	19	1	20
22	Tamil Nadu	279	35	314	161	6	167	113	4	117
23	Tripura	(MT in 14 above)								
24	Uttar Pradesh	496	44	540	354	9	363	132	6	138
25	West Bengal	281	20	301	222	5	227	66	3	69
26	Chhattisgarh	..	..	..	..	..	..	..	..	..
27	Jharkhand	..	..	..	..	..	..	..	..	..
28	Uttarakhand	..	..	..	..	..	..	..	..	..
29	Andaman & Nicobar Islands	(AGMUTs in 2 above)								
30	Chandigarh	(AGMUTs in 2 above)								
31	Dadra & Nagar Haveli	(AGMUTs in 2 above)								
32	Daman & Diu	(AGMUTs in 2 above)								
33	Delhi	(AGMUTs in 2 above)								
34	Lakshadweep	(AGMUTs in 2 above)								
35	Puducherry	(AGMUTs in 2 above)								
All India		4557	490	5047	2882	65	2947	1804	63	1867

Note: (i) .. Data Not Available. (ii) Data for M.P. used for Chhattisgarh; Data for Bihar used for Jharkhand; Data for U.P. used for Uttarakhand. (iii) Data for AGMUTs used for States and Union Territories of Arunachal Pradesh, Goa, Mizoram, Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, NCT Delhi, Lakshadweep and Puducherry, (iv) Data for AM used for Assam and Meghalaya and (v) Data for MT used for Manipur and Tripura.

Source: (i) Civil List, 1996, IAS, DoPT, Govt. of India. (ii) Civil List, 1996, IPS, MHA, GOI and (iii) Indian Forest Service, Civil List 2008, Min. of Environment and Forest, GOI.

Number of IAS, IPS and IFS Officials in Service in 2006

S.No.	States/Union Territories	IAS			IPS			IFS		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Andhra Pradesh	270	38	308	182	11	193	134	7	141
2	Arunachal Pradesh, Goa, Mizoram and Union Territories (AGMUTs)	180	36	216	129	13	142	129	8	137
3	Assam & Meghalaya (AM)	188	15	203	127	2	129	105	3	108
4	Bihar	221	18	239	150	5	155	41	0	41
5	Goa	(AGMUTs in 2 above)								
6	Gujarat	194	27	221	132	6	138	101	1	102
7	Haryana	169	33	202	108	7	115	63	3	66
8	Himachal Pradesh	96	21	117	64	2	66	99	4	103
9	Jammu & Kashmir	102	5	107	115	2	117	84	3	87
10	Karnataka	199	37	236	132	6	138	150	11	161
11	Kerala	146	20	166	116	3	119	118	3	121
12	Madhya Pradesh	247	44	291	206	10	216	262	10	272
13	Maharashtra	296	44	340	180	8	188	164	7	171
14	Manipur & Tripura (MT)	163	6	169	95	1	96	81	3	84
15	Meghalaya	(AM in 3 above)								
16	Mizoram	(AGMUTs in 2 above)								
17	Nagaland	48	4	52	39	4	43	28	0	28
18	Orissa	156	21	177	94	10	104	109	4	113
19	Punjab	150	21	171	113	5	118	43	4	47
20	Rajasthan	192	28	220	130	11	141	101	7	108
21	Sikkim	39	6	45	29	2	31	40	1	41
22	Tamil Nadu	262	39	301	183	10	193	133	6	139
23	Tripura	(MT in 14 above)								
24	Uttar Pradesh	424	49	473	332	12	344	150	7	157
25	West Bengal	219	25	244	220	4	224	97	7	104
26	Chhattisgarh	78	11	89	63	1	64	115	5	120
27	Jharkhand	111	17	128	76	8	84	125	3	128
28	Uttarakhand	69	6	75	44	7	51	62	7	69
29	Andaman & Nicobar Islands	(AGMUTs in 2 above)								
30	Chandigarh	(AGMUTs in 2 above)								
31	Dadra & Nagar Haveli	(AGMUTs in 2 above)								
32	Daman & Diu	(AGMUTs in 2 above)								
33	Delhi	(AGMUTs in 2 above)								
34	Lakshadweep	(AGMUTs in 2 above)								
35	Puducherry	(AGMUTs in 2 above)								
All India		4219	571	4790	3059	150	3209	2534	114	2648

Note: AGMUTs for states and union territories of Arunachal Pradesh, Goa, Mizoram, Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, NCT Delhi, Lakshadweep and Puducherry, AM for Assam and Meghalaya and MT for Manipur and Tripura.

Source: (i) Civil List, 2006, DoPT, Govt. of India (ii) Female data provided by MHA, (iii) Indian Police Service, Civil List, 2006, Min. of Home Affairs, GOI (iv) Indian Forest Service, Civil List 2008, Min. of Environment and Forests, GOI.

Enrolment in M.B.B.S. and B.E./B.Sc.(Engg)/B.Arch., 1995-96 (Single Indicator)

S.No.	States/Union Territories	B.E./B.Sc.(Engg)/B.Arch.			M.B.B.S.		
		Boys	Girls	Total	Boys	Girls	Total
1	Andhra Pradesh	24507	5969	30476	4319	3514	7833
2	Arunachal Pradesh	235	27	262	..	..	..
3	Assam	2946	300	3246	1667	631	2298
4	Bihar	5942	330	6272	12565	1547	14112
5	Goa	589	233	822	328	326	654
6	Gujarat	13043	2790	15833	1172	667	1839
7	Haryana	2834	305	3139	1223	986	2209
8	Himachal Pradesh	570	59	629	422	227	649
9	Jammu & Kashmir	712	38	750	836	634	1470
10	Karnataka	64372	9651	74023	5324	1964	7288
11	Kerala	9990	3120	13110	2108	1259	3367
12	Madhya Pradesh	9904	1416	11320	3290	1450	4740
13	Maharashtra	69983	10397	80380	14677	11738	26415
14	Manipur	..	..	..	308	100	408
15	Meghalaya	..	..	..	..	..	..
16	Mizoram	..	..	..	..	..	..
17	Nagaland	..	..	..	..	..	..
18	Orissa	2503	122	2625	2289	517	2806
19	Punjab	2778	383	3161	1654	1710	3364
20	Rajasthan	4425	126	4551	2607	1410	4017
21	Sikkim	..	..	..	..	..	..
22	Tamil Nadu	30805	8212	39017	6563	4753	11316
23	Tripura	402	77	479	..	..	..
24	Uttar Pradesh	13714	515	14229	5318	1592	6910
25	West Bengal	7292	395	7687	2812	958	3770
26	Chhattisgarh	..	..	..	..	..	..
27	Jharkhand	..	..	..	..	..	..
28	Uttarakhand	..	..	..	..	..	..
29	Andaman & Nicobar Islands	..	..	..	..	..	..
30	Chandigarh	21	18	39	..	..	..
31	Dadra & Nagar Haveli	..	..	..	..	..	..
32	Daman & Diu	..	..	..	..	..	..
33	NCT Delhi	3532	415	3947	2245	1853	4098
34	Lakshadweep	..	..	..	..	..	..
35	Puducherry	855	282	1137	612	275	887
All India		271954	45180	317134	72339	38111	110450

Note: (i) .. Data Not Available. (ii) Data for M.P. used for Chhattisgarh; Data for Bihar used for Jharkhand; Data for U.P. used for Uttarakhand. (iii) For Manipur and Chandigarh, available data used. (iv) For States/UTs where data is not available, the indicator has not been considered in the calculation

Source: Selected Educational Statistics (As on 30th September 1995), 1995-96, GOI, Min. of HRD., pp 18-19.

Enrolment in M.B.B.S. and B.E./B.Sc.(Engg)/B.Arch., 2004-05 (Single Indicator)

S. No.	States/Union Territories	B.E./B.Sc.(Engg)/B.Arch.			Medicine, Dentistry, Nursing, Pharmacy, AYUSH		
		Boys	Girls	Total	Boys	Girls	Total
1	Andhra Pradesh	135116	59677	194793	8108	7563	15671
2	Arunachal Pradesh	304	56	360	43	42	85
3	Assam	2941	413	3354	1500	1095	2595
4	Bihar	9189	423	9612	7459	982	8441
5	Goa	2064	1099	3163	305	647	952
6	Gujarat	25919	8909	34828	5948	3601	9549
7	Haryana	29906	9036	38942	1917	744	2661
8	Himachal Pradesh	1586	263	1849	1032	926	1958
9	Jammu & Kashmir	1032	161	1193	1420	665	2085
10	Karnataka	25108	7755	32863	36767	19472	56239
11	Kerala	16690	4172	20862	3514	4745	8259
12	Madhya Pradesh	21120	5430	26550	4897	2863	7760
13	Maharashtra	105085	28059	133144	21521	20422	41943
14	Manipur	390	69	459	95	69	164
15	Meghalaya	..	..	..	..	..	..
16	Mizoram	..	..	..	..	..	..
17	Nagaland	..	..	..	..	..	..
18	Orissa	9410	839	10249	5074	1113	6187
19	Punjab	13439	3625	17064	2969	5775	8744
20	Rajasthan	7292	1509	8801	5868	1448	7316
21	Sikkim	1122	375	1497	168	171	339
22	Tamil Nadu	34771	14695	49466	42950	4735	47685
23	Tripura	502	135	637	61	26	87
24	Uttar Pradesh	18764	3241	22005	6467	5061	11528
25	West Bengal	40070	8616	48686	2952	1005	3957
26	Chhattisgarh	10108	3101	13209	1040	625	1665
27	Jharkhand	7295	1128	8423	409	228	637
28	Uttarakhand	1035	256	1291	342	205	547
29	Andaman & Nicobar Islands	..	..	..	..	..	..
30	Chandigarh	1606	463	2069	386	799	1185
31	Dadra & Nagar Haveli	..	..	..	..	..	..
32	Daman & Diu	..	..	..	..	..	..
33	NCT Delhi	5933	730	6663	3502	3314	6816
34	Lakshadweep	..	..	..	..	..	..
35	Puducherry	3410	1167	4577	982	711	1693
All India		531207	165402	696609	167696	89052	256748

Note: (i) .. Data Not Available. (ii) For States/UTs where data is not available, the indicator has not been considered in the calculation

Source: *Selected Educational Statistics, 2004-05*, pp 11.

GEM Dimension 3: Power over Economic Resources**Number of Operational Land Holdings
During Agriculture Census, 1995-96, (in '000)**

S.No.	State	Male	Female
1	Andhra Pradesh	8673	1927
2	Arunachal Pradesh	88	15
3	Assam	2677	Neg
4	Bihar	13056	1076
5	Goa	55	16
6	Gujarat	3338	427
7	Haryana	1585	132
8	Himachal Pradesh	810	52
9	Jammu & Kashmir	1281	52
10	Karnataka	5320	894
11	Kerala	4773	1460
12	Madhya Pradesh	..	..
	Chhattisgarh + Madhya Pradesh	8952	647
13	Maharashtra	9261	1377
14	Manipur	138	5
15	Meghalaya	160	0
16	Mizoram	59	6
17	Nagaland	138	11
18	Orissa	3909	53
19	Punjab	1085	7
20	Rajasthan	5192	156
21	Sikkim	40	3
22	Tamil Nadu	6681	1322
23	Tripura	277	23
24	Uttar Pradesh	..	..
25	West Bengal	6342	205
26	Chhattisgarh	..	..
27	Jharkhand	..	..
28	Uttarakhand	..	..
	Uttar Pradesh + Uttarakhand	20376	1128
29	Andaman & Nicobar Islands	8	2
30	Chandigarh	2	Neg
31	Dadra & Nagar Haveli	12	2
32	Daman & Diu	3	1
33	NCT Delhi	30	4
34	Lakshadweep	7	2
35	Puducherry	26	7
Total		104354	11012

Note: (i) .. Data Not Available. (ii) Bihar and Meghalaya data for 2000-01 was estimated and no Census was conducted in Jharkhand in 2000-01. (iii) Value for combined States has been taken for M.P. and Chhattisgarh and U.P. and Uttarakhand; the value for Bihar has been applied to Jharkhand; the average of values for Punjab and Haryana has been applied to Chandigarh as the value given is negligible. (iv) Neg is Negligible.

Source: All India Report on Agriculture Census, 2000-01, Table No. 6.1, pp 131-133, Agriculture Census Division, Department of Agriculture Census & Cooperation, Ministry of Agriculture.

**Number of Operational Land Holdings
During Agriculture Census, 2000-01, (in '000)**

S.No.	State	Male	Female
1	Andhra Pradesh	9180	2347
2	Arunachal Pradesh	95	11
3	Assam	2656	53
4	Bihar	10436	1119
5	Goa	50	14
6	Gujarat	3747	470
7	Haryana	1371	142
8	Himachal Pradesh	850	63
9	Jammu & Kashmir	1323	116
10	Karnataka	5932	1134
11	Kerala	5202	1374
12	Madhya Pradesh	6874	483
	Chhattisgarh + Madhya Pradesh	9788	824
13	Maharashtra	10190	1878
14	Manipur	145	4
15	Meghalaya	164	50
16	Mizoram	69	7
17	Nagaland	132	11
18	Orissa	3940	125
19	Punjab	988	8
20	Rajasthan	5605	198
21	Sikkim	65	1
22	Tamil Nadu	6422	1417
23	Tripura	429	50
24	Uttar Pradesh	20380	1266
25	West Bengal	6561	226
26	Chhattisgarh	2914	340
27	Jharkhand	..	..
28	Uttarakhand	828	60
	Uttar Pradesh + Uttarakhand	21208	1326
29	Andaman & Nicobar Islands	9	3
30	Chandigarh	1	Neg
31	Dadra & Nagar Haveli	12	2
32	Daman & Diu	5	1
33	NCT Delhi	24	3
34	Lakshadweep	6	3
35	Puducherry	29	8
Total		137630	15137

Note: (i) .. Data Not Available. (ii) Bihar and Meghalaya data for 2000-01 was estimated and no Census was conducted in Jharkhand in 2000-01. (iii) Data for Bihar used for Jharkhand; average of value for Punjab and Haryana used for Chandigarh as the value given is negligible. (iv) Neg is Negligible.

Source: All India Report on Agriculture Census, 2000-01, Table No. 6.1, pp 131-133, Agriculture Census Division, Department of Agriculture Census & Cooperation, Ministry of Agriculture.

**Number of Credit Accounts for All
Scheduled Commercial Banks in India as on 31st March, 1996**

S.No.	State	Male	Female	Total
1	Andhra Pradesh	250324	23299	273623
2	Arunachal Pradesh	463	43	506
3	Assam	44161	1250	45411
4	Bihar	102037	2177	104214
5	Goa	13913	1397	15310
6	Gujarat	192553	11545	204098
7	Haryana	113421	4763	118184
8	Himachal Pradesh	25208	1410	26618
9	Jammu & Kashmir	23367	1234	24601
10	Karnataka	298322	26695	325017
11	Kerala	184772	22931	207703
12	Madhya Pradesh	163912	7659	171571
	Maharashtra	362195	28784	390979
13	Manipur	7413	488	7901
14	Meghalaya	2574	278	2852
15	Mizoram	508	123	631
16	Nagaland	1831	106	1937
17	Orissa	54606	1870	56476
18	Punjab	200589	8372	208961
19	Rajasthan	122732	5315	128047
20	Sikkim	820	42	862
21	Tamil Nadu	275144	32986	308130
22	Tripura	3535	117	3652
23	Uttar Pradesh	271770	10007	281777
24	West Bengal	232694	6058	238752
25	Chhattisgarh	..	..	..
26	Jharkhand	..	..	..
27	Uttarakhand	..	..	..
28	Andaman & Nicobar Islands	664	48	712
29	Chandigarh	11344	895	12239
30	Dadra & Nagar Haveli	492	40	532
31	Daman & Diu	663	28	691
32	Delhi	94139	7334	101473
33	Lakshadweep	95	6	101
34	Puducherry	5296	578	5874
All India		3061557	207878	3269435

Note: (i) .. Data Not Available. (ii) Data for M.P. used for Chhattisgarh; Data for Bihar used for Jharkhand; Data for U.P. used for Uttarakhand. (iii) The data pertains to BSR-1A i.e. for accounts with credit limit above Rs 2 lakh.

Source: BSR - 1A surveys.

**Number of Credit Accounts for All
Scheduled Commercial Banks in India as on 31st March, 2006**

S.No.	State	Male	Female	Total
1	Andhra Pradesh	426659	60062	486721
2	Arunachal Pradesh	2735	474	3209
3	Assam	61459	7284	68743
4	Bihar	85303	9713	95016
5	Goa	22346	3510	25856
6	Gujarat	226434	22067	248501
7	Haryana	175268	18964	194232
8	Himachal Pradesh	34432	4401	38833
9	Jammu & Kashmir	46315	2965	49280
10	Karnataka	504420	76868	581288
11	Kerala	301558	55129	356687
12	Madhya Pradesh	250587	23120	273707
13	Maharashtra	1457631	174854	1632485
14	Manipur	6740	2247	8987
15	Meghalaya	7169	3363	10532
16	Mizoram	5191	1978	7169
17	Nagaland	2659	545	3204
18	Orissa	131376	10955	142331
19	Punjab	248182	24590	272772
20	Rajasthan	223094	22875	245969
21	Sikkim	6707	879	7586
22	Tamil Nadu	548465	84634	633099
23	Tripura	7411	657	8068
24	Uttar Pradesh	385209	38231	423440
25	West Bengal	226367	25851	252218
26	Chhattisgarh	52702	6557	59259
27	Jharkhand	56314	5987	62301
28	Uttarakhand	45333	5304	50637
29	Andaman & Nicobar Islands	1581	438	2019
30	Chandigarh	44713	4657	49370
31	Dadra & Nagar Haveli	439	62	501
32	Daman & Diu	480	63	543
33	NCT Delhi	258457	77705	336162
34	Lakshadweep	72	3	75
35	Puducherry	8579	1647	10226
All India		5862387	778639	6641026

Note: The data pertains to BSR-1A i.e. for accounts with credit limit above Rs 2 lakh.

Source: BSR - 1A surveys.

Statistical Tables for Districts

Indicators and Source of Data Used to Estimate HDI, GDI and GEM for the Districts

Indicators and Source of Data Used to Estimate HDI and GDI for the Districts

Indicators for HDI & GDI	Year for which data used to estimate 2001 Index along with the data source	
	Mahabubnagar	Jodhpur
Infant Mortality Rate	2001, Census 2001	2001, Census 2001
Life Expectancy at age 1	NA	NA
7+Literacy Rate	2001, Census 2001	2001, Census 2001
Mean Years of Education for 15+ age group	NA	NA
Work Force Participation Rate (WFPR)	2001, Census 2001	2001, Census 2001
Wage Rate	2004-05 Andhra Pradesh Human Development Report 2007 (AP HDR 2007)	1999 Agricultural Wages in India 1999, Central Ministry of Agriculture
Net District Domestic Product (NDDP)	2004-05 (at 1999-00 prices) AP HDR 2007	2001 (at 2001 prices) http://statistics.rajasthan.gov.in/socio_economic.htm
Population	2001, Census 2001	2001, Census 2001

Indicators and Source of Data Used to Estimate GEM for the Districts

Indicators for GEM	Year for which data used to estimate 2006 Index along with the data source
	Mahabubnagar
% Share of Parliamentary Seats (elected)	2004, Election Commission of India
% Share of Seats in Legislature (elected)	2004, Election Commission of India
% Share of Seats in <i>Zilla Parishads</i> (elected)	2006, DES, Andhra Pradesh
% Share of Seats in <i>Gram Panchayats</i> (elected)	2006, DES, Andhra Pradesh
% Candidates in Electoral Process in National Parties in Parliamentary Election	2004, Election Commission of India
% Electors exercising the right to vote in Parliamentary Election	2004, Election Commission of India
% Share of Officials in service in IAS, IPS and Indian Forest Service	2006, DES, Andhra Pradesh
% Share of Enrolment in Medical and Engineering Colleges	2006, DES, Andhra Pradesh
% Share of Operational Land Holdings	2006, DES, Andhra Pradesh
% Females/Males with Bank Accounts in Scheduled Commercial Banks (with credit limit above Rs. 2 lakh)	2006, RBI

1) NA: Not Available

2) Estimated Earned Income Share per capita per annum calculated using WFPR, wage rate, NDDP and total population. This has been used in calculation of HDI, GDI and GEM; in case of HDI, GDI logarithmic value has been used while for GEM value as such has been used as in the UNDP methodology.

Statistical Tables for HDI and GDI for Mahabubnagar and Jodhpur

(1) A Long and Healthy Life: Infant Mortality Rate 2001

	Male	Female	Total
Mahabubnagar	62	54	58
Jodhpur	66	74	70

Source: Census of India, 2001

(2) Knowledge: Literacy Rate 2001

	Male	Female	Total
Mahabubnagar	56.63	31.98	44.41
Jodhpur	72.96	38.64	56.67

Source: For Mahabubnagar 7+ Literacy Rate for 2001 from Andhra Pradesh Human Development Report 2007 (AP HDR 2007) page 235 (Basic Source: Census, 2001)

For Jodhpur basic data sheet 0815 of Census, 2001

(3) A Decent Standard of Living

Work Force Participation Rate (WFPR) 2001

	Male	Female	Total
Mahabubnagar	56.3	47.2	51.9
Jodhpur	48.43	27.09	38.28

Source: For Mahabubnagar from AP HDR 2007 page 226 and 228

For Jodhpur http://statistics.rajasthan.gov.in/socio_economic.htm

Wage Rate

	Male	Female
Mahabubnagar 2004-05	52.8	35.4
Jodhpur 1999	42	35.83

Source: (i) For Mahabubnagar wage rate 2004-05 is for agricultural field labour from page 229 of Appendix III of AP HDR 2007

(ii) For Jodhpur calculated by averaging wage rates for ploughing for men and weeding for women during different months of the year, Agricultural Wages in India 1999, Central Ministry of Agriculture.

Net District Domestic Product (NDDP)

Mahabubnagar 2004-05 at 1999-00 prices	Rs. 13342.00 per person per annum
Jodhpur 2001 at current price	Rs. 16791.00 per person per annum

Source: (i) For Mahabubnagar per capita gross DDP from AP HDR 2007 for 2004-05 in 1999-00 prices page 225 of Appendix III

(ii) For Jodhpur from http://statistics.rajasthan.gov.in/socio_economic.htm

Population (thousands)

	Male	Female	Total
Mahabubnagar	1782	1732	3514
Jodhpur	1514	1373	2887

Source: Census of India, 2001

Estimated Earned Income per capita per annum (Rs)*

	Male	Female
Mahabubnagar	17014	9564
Jodhpur	22345	10665

*calculated value

Statistical Tables for GEM for Mahabubnagar

(1) Political Participation and Decision-making

Performance in Parliamentary Elections, 2004

	Contested		Elected	
	Male	Female	Male	Female
Mahabubnagar	4	1	1	0

Source: Statistical Report on General Elections 2004, Election Commission of India

Electors and Voters for Parliamentary Elections, 2004

	Contested		Voters	
	Male	Female	Male	Female
Mahabubnagar	672495	693427	434557	431686

Source: Statistical Report on General Elections 2004, Election Commission of India

Mahabubnagar Assembly Election, 2004

Mahabubnagar	Contested		Elected	
	Male	Female	Male	Female
Alampur	13	1	1	0
Amarchinta	5	1	0	1
Gadwal	7	1	0	1
Kodangal	1	1	1	0
Mahabubnagar	10	2	1	0
Makthal	4	0	1	0
Wanaparthy	4	1	1	0
Total	44	7	5	2

Source: Statistical Report on General Elections 2004, Election Commission of India

Percentage share of seats in Gram Panchayats and Zilla Parishads, 2006

	Gram Panchayats		Zilla Parishads	
	Male	Female	Male	Female
Mahabubnagar	67	33	64	36

Source: Directorate of Economics and Statistics, A.P. Government

Candidates in Electoral Process in National Parties in Parliamentary Election, 2004

Mahabubnagar	Male	Female
Bharatiya Janta Party	0	0
Bahujan Samaj Party	1	0
Communist Party of India	0	0
Communist Party of India (M)	0	0
Indian National Congress	1	0
Nationalist Congress Party	0	0
Total	2	0

Source: Statistical Report on General Elections 2004, Election Commission of India

(2) Economic Participation and Decision-making

Percentage Share in All India Services, 2006

	Male	Female
Mahabubnagar	2	1

Source: Directorate of Economics and Statistics, A.P. Government

Percentage Graduating from Medical and Engineering Colleges, 2006

	Male	Female
Mahabubnagar	70.1	29.9

Source: Directorate of Economics and Statistics, A.P. Government

(3) Power over Economic Resources

Estimated Earned Income per capita per annum (Rs)*

	Male	Female
Mahabubnagar	17014	9564

*calculated value

Share in Number of Operational Land Holdings, 2006

	Male	Female
Mahabubnagar	639851	129226

Source: Directorate of Economics and Statistics, A.P. Government

Number who Availed of Credit from Scheduled Commercial Banks 2006

	Male	Female
Mahabubnagar	7168	1068

Source: RBI, BSR – 1A Surveys.



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