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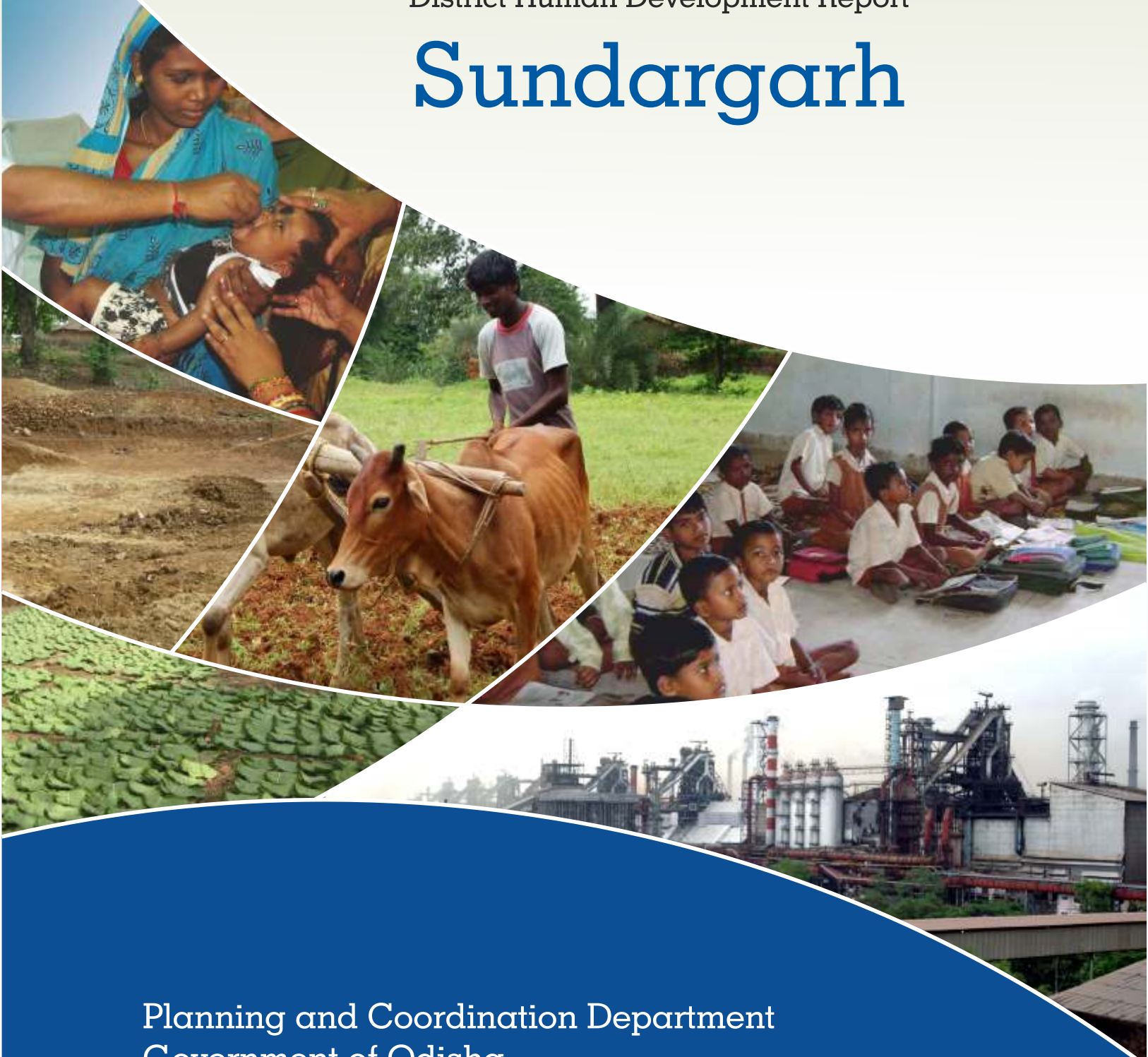
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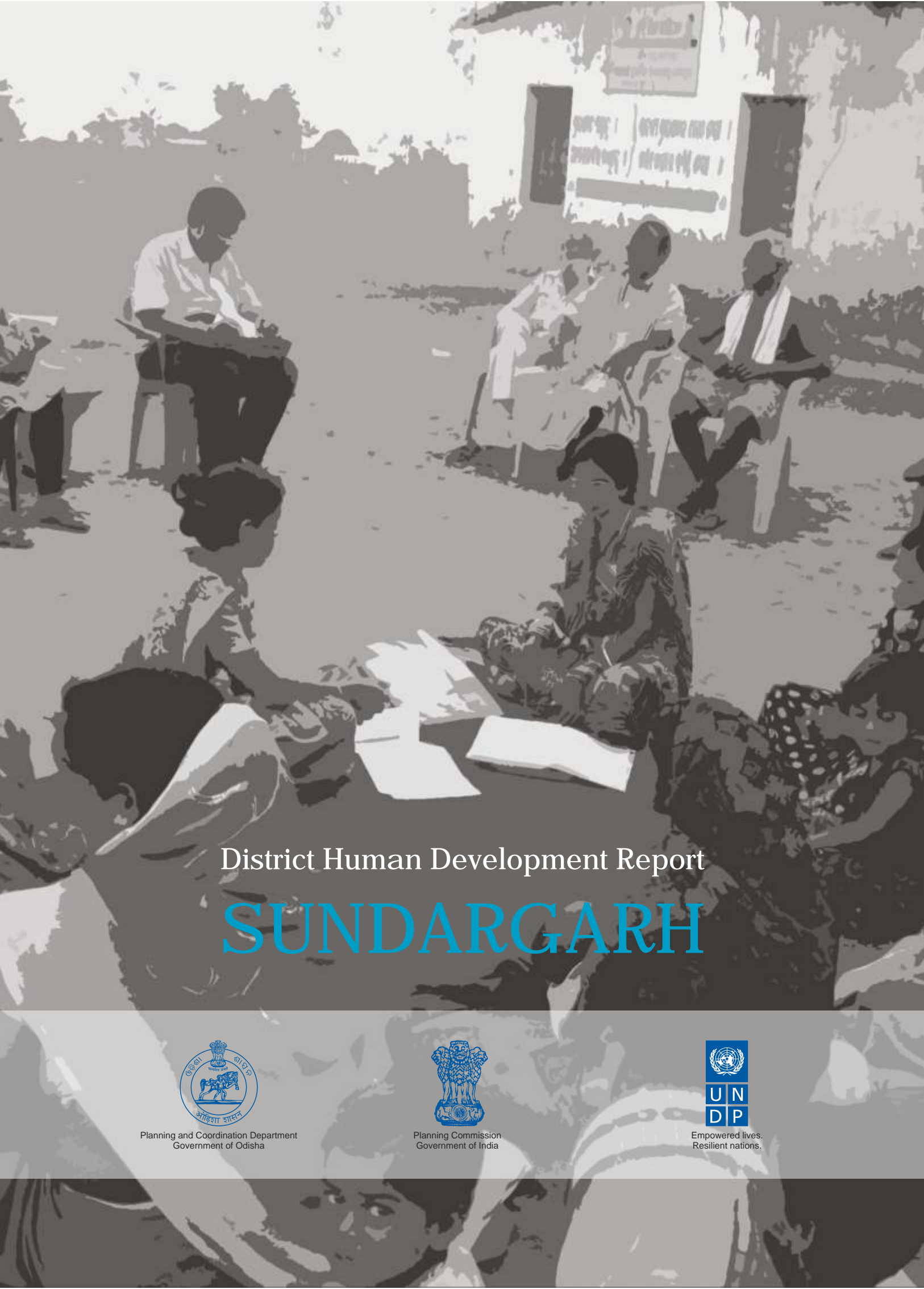
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District Human Development Report

Sundargarh



Planning and Coordination Department
Government of Odisha



District Human Development Report
SUNDARGARH



Planning and Coordination Department
Government of Odisha



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Naveen Patnaik
Chief Minister, Odisha



STATE SECRETARIAT
BHUBANESWAR
321 CMO - 23.06.15

M E S S A G E

I am glad to know that the first District Human Development Report (DHDR) Sundargarh district has been prepared with the joint efforts of the Planning & Coordination Department, Government of Odisha, Planning Commission, Government of India, and the United Nation Development Programme (UNDP). This initiative provides a frame work for a people - centric development process. Human Development has been conceived as process that enables people to improve their skill, capabilities, and choices to live a healthy and fulfilled life.

The DHDR of Sundergarh attempts to make an independent assessment of the status of Human Development in the district highlighting the status of literacy level, key health indicators and livelihood option available to the people of the district and bring out intra - district variation in respect of Human Development indicators. It also underscores the challenges ahead and offers new opportunities for the people of the district.

It is hoped that this exercise will help evolve an appropriate development strategy that ensures effective and efficient use of available resources for further well being of the people of the district and encourages sharing of development benefits and opportunities in an equitable manner. The Joint initiative of the State Government, Government of India and UNDP for preparation of this report needs to be appreciated.

I would like to thank Planning Commission (Now NITI Aayog), Government of India and UNDP for their assistance and support for the preparation of DHDR of Sundargarh district and look forward to future cooperation in following up the recommendations of this report.

(NAVEEN PATNAIK)



Smt. Usha Devi
Minister
Women & Child Development Department,
Planning & Coordination Department

M E S S A G E

I am glad to know that Planning and Coordination Department, Government of Odisha has prepared the first District Human Development Report (DHDR) of Sundargarh district with support from Planning Commission (Now NITI Aayog), Government of India and United Nation Development Programme (UNDP). I am also glad to note that the District Administration has also taken keen interest in preparation of this report.

The major thrust of the District Human Development Report is to prepare a status of "Human Development" in Sundargarh district and to highlight intra-district variations in key indicators. This also identifies gaps in "Human Development" in the district and draws attention of the decision makers to focus attention on the areas which needs further action.

I hope this report will be well received by different stakeholders and the decentralized planning process will be suitably reoriented to effectively address the challenges ahead and meet the reasonable expectations of the people of Sundargarh district.


(USHA DEVI) 11.9.16



Gokul Chandra Pati, IAS
Chief Secretary, Odisha



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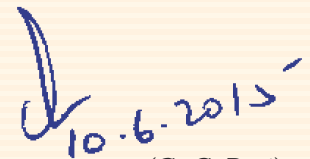
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M E S S A G E

It gives me immense pleasure to know that Planning & Coordination Department has prepared the first District Human Development Report (DHDR) of Sundargarh district. This report provides the current status of key human development indicators at district and block levels.

The report acknowledges the sincere efforts made by the Government to accelerate the process of development viz literacy, health status and income level in Sundargarh district. This report has also highlighted the challenges that the district is facing in improving human development indicators and accelerating the process for all round development of the people of Sundargarh district. This report not only provides valuable inputs for preparation of district plan but also provides a benchmark against which future attainment may be assessed.

I would like to thank NITI Aayog, Government of India and United Nation Development Programme (UNDP) for their support in preparation of this report and hope that the report will be well received by different stakeholders including policy planners researchers and others.


10.6.2015
(G. C. Pati)



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Upendra Nath Behera
Development Commissioner cum
Additional Chief Secretary, Odisha

M E S S A G E

I am glad to know that the first Human Development Report (DHDR) of Sundargarh district has been prepared with the joint efforts of Planning & Coordination Department, Government of Odisha, Planning Commission (Now Niti Aayog), Government of India and the United Nations Development Programme (UNDP) and going to be released shortly. This report provides disaggregated data and analysis as regards the current status of human development indicators at district and sub-district level. The concept of "Human Development" is people centric and a multi dimensional measure of the people's overall well-being based on several socio-economic indicators including income, literacy, health, access to safe drinking water gender issue etc.

The report captured the efforts made by the Government to improve the delivery of Public services for the people in general and the marginalized groups including Scheduled Tribes, Scheduled Castes and women in particular. However, there are several challenges that needs to be addressed.

We express gratitude to Planning Commission (Now NITI Aayog), Government of India and the United Nations Development Programme (UNDP) for their support and guidance.

We in the Planning & Coordination Department hope that this report will be of great help to researchers, policy makers and others. We look forward to constructive comments and suggestions from all concerned who may find this report useful and have a stake in improving human development conditions in Sundargarh district and rest of the State.

(Upendra Nath Behera)



Mr. Bhupinder Singh Poonia, IAS
Collector & District Magistrate, Sundargarh



P R E F A C E

Human Development is a development paradigm that is about much more than the economic development. It is about creating an environment in which people can realise their full potential and lead productive, creative lives in accordance with their needs and interest. The most basic capabilities for human development are to lead a long and healthy life, to be knowledgeable, resources needed for a standard living and to be able to participate in life of the community. Without these, many choices are simply not available and many opportunities in life remain inaccessible.

Preparation of District Human Development Report (DHDR) beyond the earlier attempts of National and State HDRs, is an innovative and sincere attempt of reflecting the real socio-economic condition of the people at grass-root level. The main objective of this report is to inform influence and transform district planning process in Sundargarh district by reviewing the State of human development attainments in different pockets of the district and identifying the development issues that need to be resolved so that human development in the district can become more inclusive and holistic touching the lives of the people of Sundargarh District.

Sundargarh district was constituted in 1948 after merger of two ex-states, Gangpur and Bonei in Odisha. It is the second largest district of the state having forest area more than half of its geographical area. The district comprises about 5 percent of the State population with decadal growth rate of 14.35 percent, sex ratio 973 (female per 1000 male population), better than the state average. The density of population of the district is 216 persons per Sq Km as against the state average of 270 persons Sundargarh district is a tribal dominated district with 50.7 percent tribal population and is the second highest tribal populated district in the state. About 41.7 percent population of the district was reported as working population and the male working population is more than double of female working population.

Sundargarh district is richly endowed with large mineral resources which includes iron-ore, coal, manganese, bauxite etc. almost one-third of the states mineral reserve are confined to Sundargarh and Keonjhar district. The abundance and quality grades of these mineral reserves put the district in the industrial map of Odisha and also create huge employment potential. The maximum number of MSME industry of the State belongs to Sundargarh district.

Scheduled Castes and Scheduled Tribes Communities constitutes a large proportion of the district population and have reported much higher incidence of Poverty. Though there was significant reduction in rural poverty by 30.53 percentage points during 2004-05 to 2011-12, it is still very high. Agriculture, animal husbandry, fisheries and collection of non-timber forest products are important sources of livelihood in the district. The majority of farmers are marginal farmers with average operational holding of 0.59 ha. The real per-capita income of the district at 2004-05 prices was Rs. 36,128/- in 2008-09 and per worker real Gross District Domestic Product (GDDP), at 2004-05 prices was Rs. 1,19,409/- in 2009-10.

The District Human Development Report, Sundargarh is prepared with the support of UNDP and Planning Commission Government of India and with the encouragement of the Planning and Coordination Department, Government of Odisha. This document has been prepared by the Technical Support Institute namely C-TRAN, Bhubaneswar, in consultation with PRI representatives, academicians common men and other stakeholders of the district. We would like to extend our acknowledgement and gratitude to all those who were instrumental in preparation of the documents. Hope this will be a useful document for the district administration and facilitate preparation of a realistic integrated District Plan. This will also be useful to administration and academics of the district and the State.

(BHUPINDER SINGH POONIA)

ACKNOWLEDGEMENT

A number of organizations and individuals have contributed for preparation of the first District Human Development Report (DHDR) of Sundargarh district. We are grateful to Shri. Naveen Patnaik, Hon'ble Chief Minister, Odisha, who inspired us to take up the task of preparation of this report. We are also grateful to Smt. Usha Devi Hon'ble Minister Women & Child Development Department and Planning & Coordination Department who lent her wholehearted support for completion of this assignment.

Shri Jugal Kishore Mohapatra former Chief Secretary and Chief Development Commissioner and Shri Gokul Chandra Pati Chief Secretary and Chief Development Commissioner, Odisha both guided us during the tedious process of preparation of the DHDR, Sundargarh. This document would not have been completed without full support and guidance of Shri Aditya Prasad Padhi former Development Commissioner-cum-Additional Chief Secretary and Shri Upendra Nath Behera Development Commissioner-cum-Additional Chief Secretary. Their guidance and support are gratefully acknowledged.

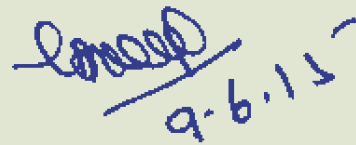
Dr. R. V. Singh, Ex-Officer on Special Duty, Member Secretary, PHDMA Planning & Coordination Department whose constant supervision inspired us in preparation of this DHDR, Sundargarh. His wholehearted support for completion of this report is greatly acknowledged.

We are also thankful to the District Administration of Sundargarh district Ms. Salini Pandit, Ms. Rupa Rosan Sahoo former Collectors and Shri Bhupendra Singh Poonia collector of Sundargarh district steered the process for completion of this report. They were ably assisted by Shri Pabita Mohan Diwebedi, former Deputy Director, Shri Srikanta Kumar Dalei Deputy Director and Shri Ram Chandra Nayak, D.P.O and his team in DPMU, Sundargarh. Besides, other District Level Officers are also provided their cooperation for preparation of the report. Their cooperation and support is highly appreciated.

Shri Ashok Kumar Singha and his team from C-TRAN Consulting Private Limited, Bhubaneswar researched, wrote and completed the first draft of this report. We sincerely thank them for finalization of the report.

This work would not have been possible without the active cooperation of my colleagues in Planning & Coordination Department and Poverty and Human Development Monitoring Agency (PHDMA). They made untiring efforts from the beginning to end of the entire process for preparation of the DHDR. Shri P. K. Biswal, Additional Secretary to Government, P&C Department Shri C. R. Satapathy Deputy Director, Shri Sanjeeb Kumar Singh, Chief Accounts Officer, Shri B. K. Sahoo System Analyst, Dr. Ramesh Chellan, State Facilitator, UNICEF, Shri P. K. Dash, Ex-Assistant Director and other officials from PHDMA assisted at different stages for completion of this DHDR. Their efforts and contributions are sincerely appreciated.

We hope that District Human Development Report, Sundargarh will be well received by all stakeholders and will be useful to all those, who intend to use it. We welcome constructive suggestions and comments for further improvement of this report from all those who find this report useful and who have a stake in improving human development indicators in Sundargarh and Odisha.



(G. B. Reddy)
Officer on Special Duty and
Member Secretary, PHDMA

Executive Summary

Eight Millennium Development Goals (MDG) have been conceptualised by United Nations to be achieved by 2015. MDG are ambitious global development initiatives which aim at reducing poverty, enhancing incomes of people, achieving good health and improving education and employable skills of people so that they are able to enjoy long, healthy and fulfilled lives. Each MDG has prescribed targets and indicators, some of which are listed in individual chapters. MDG, relevant at the district level are as follows:

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability

Sundargarh district was constituted on 1st January, 1948 after merger of two ex-states, Gangpur and Bonei, in Odisha. It is the second largest district of the State with geographical area of 9,712 sq. km., which is 6.23 percent of the State area. It has a forest cover of 4,957 sq. km., which is more than half of its geographical area. The climate of the district is generally extremely hot in summer and cold in winter. The normal rainfall in the district is of the order of 1,422 mm. The district is richly endowed with mineral resources.

It is bounded on the north by Jharkhand State, on the south by Jharsuguda,

Sambalpur and Deogarh districts of Odisha and Singhbuni district of Jharkhand on the west and on the north-west by Raigarh district of Chhatishgarh. Sundargarh has been divided into three sub-divisions, 18 tehsils, 17 CD blocks, four urban local bodies and 262 gram panchayats.

The population of the district was reported 20.93 lakh in 2011 with 50.7 percent male and 49.3 percent female population. The density of population is 216 persons per sq. km., lower than the State average of 270 persons per sq. km. It is the sixth most populous district of Odisha having 4.99 percent population of the State. About 64.7 percent people reside in rural areas. Sex ratio in the district was 973 in 2011, marginally lower than the State average of 979. Sundargarh is a tribal dominated district with 50.7 percent tribal population, which is the second highest tribal population among all districts of Odisha. Munda, Kharia, Oram, Kisan, Bhuyan and Gonda are its main tribal communities.

Sundargarh contributes about eight percent of the Gross State Domestic Product (GSDP) of Odisha, which is more than double of the average district share of 3.33 percent. The average annual growth rate of the Gross District Domestic Product was reported to be 11.24 percent between 2005-06 and 2009-10. The real per capita income of the district at 2004-05 prices has increased from Rs.25,029 in 2004-05 to Rs.36,128 in 2008-09.

About 41.7 percent population of the district was reported as working population, male working population being 55.1 percent and female working population 28.0 percent in 2011. Of the total workers, main workers

constituted 61.3 percent and marginal workers 38.7 percent in 2011. The work participation rate in the district marginally increased from 39.4 percent in 1991 to 41.7 percent in 2011. The male work participation rate at 55.1 percent was higher than the female work participation rate of 28.0 percent in 2011. The rural work participation rate of 46.2 percent was higher than urban work participation rate of 33.6 percent in 2011. Male working population is more than double of female working population. However, distribution of household incomes and assets is highly unequal in the district.

- It is also heartening to note that per worker real Gross District Domestic Product (GDDP) at 2004-05 prices increased from Rs.77,197 in 2004-05 to Rs.119,409 in 2009-10.
- There is a need to improve the work participation rate of female workers who may contribute significantly to the district and state economy and incomes. Efforts are also needed to improve employable skills of women so that they can meaningfully participate in economic activities.
- There is also need to take steps to reduce inequalities in income and asset distribution among households.
- It is also a matter of concern that the number and proportion of marginal workers has been rising in recent years. This appears mainly the result of repeated division and re-distribution of farm holdings. This trend needs be arrested.
- Efforts are needed to improve employable skills of marginal workers and to augment meaningful employment opportunities for them in non-farm sectors.
- District poverty measures are not reported by Planning Commission on the basis of National Sample Survey (NSS) data. If the poverty estimates reported for the northern NSS region of Odisha, which includes Sundargarh district are taken as proxy for Sundargarh district, some inferences can be drawn as regards incidence of poverty in the district.
- There was significant reduction in rural poverty by 30.53 percentage points from 70.50 percent in 2004-05 to 39.97 percent in 2011-12 in the northern NSS region. The region reported highest poverty reduction among all NSS regions in Odisha. Further analysis has indicated that poverty reduction was also significant for ST and SC social classes.
- Though Sundargarh district has witnessed impressive economic growth and higher poverty reduction, the incidence of poverty at 39.97 percent in 2011-12 in the northern NSS region was still very high and concerted efforts were needed to continue with development momentum to reduce poverty at faster pace.
- ST and SC communities, which constitute large proportion of the district population, have reported much higher incidence of poverty. There was a need to further step up efforts to improve their livelihoods and to reduce their poverty at an accelerated pace.

Agriculture, animal husbandry, fisheries and collection of non-timber forest products are important sources of livelihoods in the district. These sectors contribute about 16 percent share to the district economy. The average operational holding among farm households is very low at 1.32 ha in the district. A majority of farmers is marginal farmers with average operational holding of 0.59 ha. The distribution of operational holdings in the district is grossly unequal. Several initiatives have been taken by the State Government to promote agriculture, horticulture, animal husbandry and fisheries sectors and to raise productivities and production. Irrigation facilities have been significantly improved over the periods. Involvement of local people, particularly those who significantly depend on forests for augmenting their incomes, in forest management and conservation has been encouraged through Vana Samarakshshan Samittees (VSS). The State has also been striving to promote financial inclusion so that people have easy access to affordable credit and other financial services. Mission Shakti which operates through Self Help Groups (SHG) is a main vehicle for women empowerment and

financial inclusion. The following interventions, however, seem desirable.

- Farm holdings have been continuously becoming smaller and economically unviable. This trend needs to be arrested.
- Land based livelihoods may be adversely affected due to climate change effects over period of time. The district is prone to frequent natural disasters. In particular, a large part of district may witness increasing loss of soil moisture. There is a need to take remedial steps so that adverse impact of climate change may be better tackled.
- There is also need to substantially improve productivity of agriculture, fisheries, animal husbandry and forestry activities.

The State has also taken several initiatives to improve food and nutritional security of the people and to tackle malnutrition and anaemia in the district. Nutritional intake of targeted children and pregnant and lactating women has been improved through supplementary nutrition programme and other interventions. Anganwadi centres have played a key role in improving access of targeted children and women to specific healthcare services and nutritional intake.

Major food interventions include Public Distribution System (PDS), Mid Day Meal (MDM), Antodaya Anna Yojana (AAY), Annapurana Yojana and subsidised rice scheme. About 4,29,511 households are entitled to concessional food and other items under PDS. MDM focuses on students in primary and upper primary schools. AAY and Annapurana Yojana cater to the needs of poorest of the poor, old and infirm persons. Subsidised rice to the extent of 25 kg per household is provided to BPL households at the rate of Rupee one a kg. These interventions are aimed at ensuring that the rural poor and others do not suffer from the pangs of hunger and have assured food security.

There is, however, need to ensure that those who are food insecure and vulnerable need special attention and the number of such households need to be reduced considerably through appropriate interventions.

Several social security benefits have been extended to targeted persons, particularly old, widows, disabled and destitute persons. These programmes include Indira Gandhi National Old Age Pension (IGNOAP), Indira Gandhi National Widowhood Pension (IGNWP), Indira Gandhi National Disability Pension (IGNDP) and Madhu Babu Pension Yojana (MBPY).

Good health is an important component for human wellbeing. Health infrastructure in the district has been considerably improved. There are 98 public health institutions including district and sub-district hospitals. There are 380 health sub-centres. The State has been striving to continuously improve the access of people to affordable healthcare services. As a result, health indicators in the district have improved significantly due to concerted efforts of the State Government. The district has considerably improved its performance in implementing National Rural Health Mission (NRHM) and other health programmes. The Reproductive and Child Health (RCH) interventions including institutional deliveries and immunisation services have also positively impacted child and women health indicators in the last decade.

- Institutional deliveries have increased from 33.6 percent in 1998-99 to 75.4 percent in 2011-12.
- About 80 percent children in the age group of 12-24 months were fully immunised in 2011-12.
- There is considerable reduction in child mortality rates. The Under Five Child Mortality Rate (U5MR) has declined from 65 in 2010-11 to 57 in 2012-13. Neo-natal Mortality Rate (NMR) and Post-neonatal Mortality Rate (PNMR) have also reduced from 39 to 33 and 16 to 14 during 2010-11 to 2013-14 respectively in the district.
- The Infant Mortality Rate (IMR) has come down from 55 in 2010-11 to 47 in 2012-13 in the district.
- There is also considerable reduction in maternal mortality in the district. The Maternal Mortality Ratio (MMR) has declined from 253 in 2010-11 to 234 in 2011-12. Special efforts are also required to achieve the targets of 41 for IMR and

120 for MMR in the district.

- Deaths due to malaria, TB and diarrhoea have reduced considerably in the district. There is greater awareness about the menace of HIV/AIDS and how to prevent and address it. The scope for treatment of HIV/AIDS has been considerably enhanced. The district has demonstrated increasing use of contraceptives.
- There are inequalities in rural and urban areas as regards access to quality healthcare services, institutional deliveries, IMR and MMR. Further efforts are needed to bridge social, gender and regional inequalities as regards crucial health indicators.

Several initiatives have been implemented to provide safe drinking water to rural areas, schools and anganwadi centres. Total Sanitation Campaign has also been mounted to encourage the use of household latrines and school and anganwadi toilets.

Sundargarh has also made considerable progress in spreading education over the years. School infrastructure has been significantly improved since 1947-48. There were 3,197 schools including 1,838 primary schools, 905 upper primary schools and 454 high schools in 2011-12. Several programmes including Sarva Shiksha Abhiyan, District Primary Education Programme, National Programme for Education of Girls at Elementary Level (NPEGEL), Kasturba Gandhi Balika Vidyalaya (KGBV) and Mid-Day-Meal programme have been implemented in the district to improve the status of education.

Enrolments both at primary (6-11 year age group) and upper primary (11-14 year age group) levels have been continuously rising. As a result of these and other interventions, the district has considerably improved literacy rates of all including female and marginalised groups including Scheduled Castes and Scheduled Tribes. The district reported literacy rates of 65.5 percent for females and 81.0 percent for males as per the 2011 census. The gender gap in literacy rates has come down from 25.6 percentage points in 1961 to 15.5 percentage points in 2011. The gap in rural and urban literacy rates has also decreased from 30.6 percentage points in 1981 to 18.7 percentage

points in 2011. The literacy rates of SC and ST communities are, however, still lower than the district averages.

- The Net Enrolment Ratio (NER) for the year 2011-12 was 99.20 percent in 6-14 year age group.
- Retention rate has improved from 43.2 percent in 2006-07 to 80.4 percent in 2011-12. The transition rate increased from 60.3 percent in 2006-07 to 95.7 percent in 2011-12.
- Out-of-school children have got reduced from 9,651 in 2008-09 to 373 in 2013-14. The dropout rates have been progressively declining over the years.
- The district is yet to achieve the objective of universal literacy among all groups including women and marginal groups. There is a pressing need to enhance enrolment rates for boys and girls both at primary and upper primary levels. The momentum that was gathered by the end of the last decade needs to be maintained.
- There are, however, several other areas, which need immediate attention. It is a matter of serious concern that literacy rates for minorities are very low, only 35.5 percent with male literacy rate of 41.3 percent and female literacy rate of 29.6 percent in 2011.
- There are still regional, social and gender disparities as regards literacy rates in the district. These disparities need to be addressed as soon as possible.
- Several schools still continue to be single teacher schools. These schools need to have prescribed number of teachers as soon as possible.

Mission Shakti has been implemented by the State to empower women and improve their financial inclusion and livelihood options. Efforts have also been made to improve gender parity. As a result, gender gap in literacy levels has come down from 25.8 percentage points in 1991 to 15.5 percentage points in 2011. There is no gender gap in net enrolment ratio at primary and upper primary levels. Female work participation rate has increased by 3.2 percentage points from 24.8 percent in 1991

to 28.0 percent in 2011. Fifty percent seats have been reserved for women in panchayat bodies with a view to enhance their participation in governance process.

- Sex ratio has increased from 931 in 1981 to 973 in 2011 in the district. However, child sex ratio in 0-6 year age group has got adverse from 970 in 1991 to 946 in 2011. This is a matter of serious concern and need be addressed in a time bound manner.
- There is a need to further improve the work participation rate of female workers who may contribute significantly to the district and state economy and incomes. Efforts are also needed to improve employable skills of women so that they can meaningfully participate in economic activities.
- Though female literacy rates have improved over the years, there is still

substantial gender gap in literacy rates in the district. This disparity need be addressed in a time bound manner.

- Women face difficulties and discrimination in accessing quality healthcare services. Concerted efforts are needed to improve their access to quality healthcare services.

Sundargarh district is susceptible to natural calamities/ disasters, in particular droughts. Though the impact of global warming and climate change has not been systematically studied at the district level, the district is likely to adversely impacted due to climate change. It is expected that the district may face frequent droughts and reduction in food output. Thus it needs to take appropriate steps to deal with such eventualities. Forests in the district are subjected to heavy biotic interference and have been facing degradation. There is a need to improve green cover both in quantity and quality.



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CHAPTER 1

Introduction

“You cannot predict the outcome of human development. All you can do is like a farmer create the conditions under which it will begin to flourish.”

-Ken Robinson

Introduction

1.1 Human Development

Human development has been conceived as an approach that keeps people at the centre stage. Human beings are considered as the real end of all development activities that aim at enhancing their achievements, freedoms and capabilities to make and realise their choices. It is a broad concept with several dimensions and focuses on enlarging people's choices. To keep things simple and manageable, the focus on human development has been on three broad heads: health, education, income and gender issues so that people's choices to live long, healthy and fulfilled lives may be expended. This document aims to analyse the status of human development that is, the status of health, education and livelihoods of the people-male and female both in Sundargarh district of Odisha. Issues regarding environmental sustainability and equity may also be discussed.

1.2 Background of the District

The district spreads over an area of 9,712 sq km which is 6.23 percent of the State area. It is surrounded by Jharkhand State in the north and Chhattisgarh State on the north-west. The district is also bounded by Jharsuguda, Sambalpur and Deogarh districts of Odisha on the south, and Keonjhar and Angul districts on the east. It is located between 21035' N and 22032' N latitudes and 83032' E

and 85022' E longitudes. Figure 1.1 maps the district.

Sundargarh is the second largest district in the State in terms of geographical area. The total cultivable land of the district is 3.35 lakh hectares (ha) and the area used for non-agriculture activity is 0.7 lakh ha. The barren and pasture land is 0.6 lakh ha and 0.3 lakh ha respectively. It is a fairly open country interspersed with tree-clad isolated peaks, vast forests tracts, extensive river valleys and mountainous terrain. It is an undulating tableland of different elevations broken up by rugged hill ranges and cut-off by torrential hill streams and Brahmani river. Because of this undulating, hilly and sloping nature of landscape, the area is subject to rapid runoff leading to soil erosion. District-wise comparison of area and population may be seen in the Annexure 1.1.

Administratively, the district is divided into three sub-divisions, namely, Bonai, Panposh and Sundargarh, 18 Tehsils and 17 Community Development (CD) Blocks. The district also has four municipalities namely, Biramitrapur, Rajgangpur, Rourkela and Sundargarh. The district has 262 Gram Panchayats (GP), 102 RI Circles and 1,762 revenue villages. Table 1.1 and 1.2 summarise various aspects of administrative set-up of the district.

Figure 1.1: Map of Sundargarh District

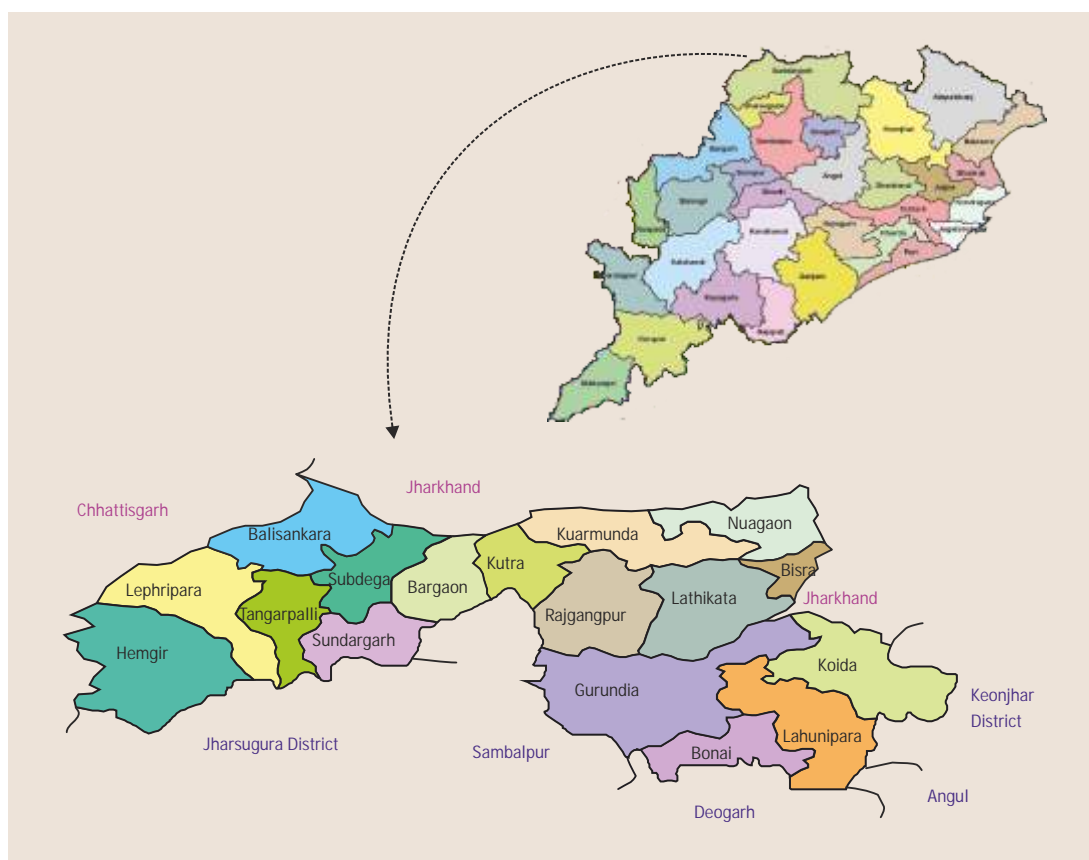


Table 1.1: Administrative Set-up of Sundargarh District

Particulars	Units
Geographical Area (sq kms)	9,712
Sub-Divisions (No.)	3
Tehsils (No.)	18
Community Development Blocks(No.)	17
Police Stations including Mahila P.S. (No.)	47
Municipal Corporation / Municipality (No.)	4
Notified Area Councils(No.)	-
Census Towns* (No.)	8
RI Circles** (No.)	102
Gram Panchayats (No.)	262
Villages* (No.)	1,762
Fire Stations (No.)	5
Assembly Constituencies (No.)	7

Source: Directorate of Economics and Statistics, Odisha, 2014; * Census of India 2011; **District Administration, Sundargarh, March 2011.

Table 1.2: Tehsils, Blocks, Municipalities and Gram Panchayat of Sundargarh District

Name of Sub-Division	Name of Tehsil	Name of Block	Number of Gram Panchayat	Name of the Municipalities
Banai	Banai	Banai	13	
	Koida	Koida	12	
	Lahunipada	Lahunipada	17	
	Gurundia	Gurundia	13	
Panposh	Biramitrapur	Nuagaon	20	Rourkela
	Kuarmunda	Kuarmunda	20	Biramitrapur
	Lathikata	Lathikata	16	
	Bisra	Bisra	15	
	Rourkela			
Sundargarh	Sundargarh	Sundargarh (Sadar)	16	Sundargarh
	Lefripada	Lefripada	17	Rajgangpur
	Tangarpalli	Tangarpali	13	
	Hemgiri	Hemgiri	19	
	Subdega	Subdega	14	
	Balisankara	Balisankara	16	
	Baragaon	Badagaon	13	
	Kutra	Kutra	16	
	Rajgangpur	Rajgangpur	12	

Source: District Rural Development Agency, Sundargarh, 2013

1.3 Historical Perspective

Sundargarh, as a district, was constituted on 1st January, 1948 after the merger of two princely States, viz., Gangpur and Bonai. Looking at the evidences of stone tools which have been found near water sources, it can be said that the district has been a place of human habitation since pre-historic era. The hand tools of early Stone Age have been found at Bishalbury, Jangra and Satkuta which are the proof of early human habitations in the district. The stone tools like flakes of middle Stone Age have also been found at Bishalbury, Bhanjgarh, Bhaludungri, Bonaigarh, Bisra, Jagannathposh, and Jhirpani. Polished stones of Neolithic era have been found at many places of the district. The pre-historic paintings found on a rock shelter at Manikmunda and similar paintings in Kalahandi, Sambalpur and

Madhya Pradesh signify an inter-action among different communities during pre-historic period. Looking at the archaeological materials available, it can be said that the district is rich in pre-historic archaeology¹.

Traditionally, the territory, which is now called Sundargarh district, formed a part of *Daksina Kosala*. *Kosala* was an important *Mahajanpada* of northern India and it continued as single unit till the rise of *Mauryas*. In the later stage, a new kingdom, called *Kosala*, grew in the Vindhya region. Eventually, it was designated as *Dakshina Kosala* in order to distinguish it from *Uttar Kosala* (North *Kosala*). In general, *Dakshina Kosala* comprised of the modern district of Raipur and Bilaspur regions of the present Chhattisgarh and districts of Sambalpur, Sundargarh, Bolangir and Kalahandi in Odisha.

¹District Gazette, 1993, Government of Odisha.

1.4 Topography and Climate

Topographically, the district exhibits widely diversified tracts of mountains, forests and extensive river valleys with variegated flora and fauna and a rich bio-diversity. Sundargarh and Panposh sub-divisions are long and undulating tracts of varying heights up to about 700 ft. (213 meter) above the mean sea level, dotted with hill-ranges and isolated peaks of considerable height. Similarly, the Bonai sub-division is largely an isolated hilly tract with an average elevation of about 800 ft. (244 meter) above mean sea level.

The hot season begins in March and touches high temperatures in May and ranging between 39°C to 47°C. Sometimes, different parts of the district receive pre-monsoon rains which regulate the rising temperature. The temperature begins to fall with the arrival of monsoon by mid-June. The district receives maximum rainfall between June and September through south-west monsoon. Though the normal rainfall is 1,422.4 mm, rainfall has mostly been erratic and during the last decade, there is a wider deviation from normal rainfall ranging from -318.8 mm to -656.80 mm. The month of July gets the heaviest rainfall of the year, though rainfall is not very regular throughout the season. The relative humidity varies from 30 percent to 86 percent. The relative humidity remains high during monsoon. During winter, the air remains fairly dry. The driest part of the year is the early summer season when the relative humidity remains low generally of the order of 25 percent. The district faces occasional flash floods, because of the terrain. This cause heavy damage to roads and crops. Occurrence of droughts of different degree (less than 50 percent crop loss, 50 to 75 percent crop loss and more than 75 percent crop loss) is frequent due to various reasons such as uneven and erratic rainfall, inadequate irrigation infrastructure and inadequate soil moisture to retain the crop etc². Month-wise maximum and minimum temperature of the district from 1997 to 2012 are given in Annexure 1.2.

The frequency of annual rainfall data of the district from 1901 to 1950, which is given in Annexure 1.3, reflects that the district received a minimum of 1,201 mm rainfall with a highest of 2,300 mm over a period of 47 years. It can be said that overall amount of rainfall received by the district was quite sufficient for agricultural activities and occurrence of draught was quite insignificant. The average annual rainfall in the district during the period from 1901 to 1950 was 1,647.6 mm and it was fairly uniform in the whole district. About 86 percent of the annual rainfall was received during the monsoon months extending over June to September and July being the month of heaviest rainfall. During the year 1943, the district received the heaviest rainfall which was about 138 percent of the normal rainfall. The lowest annual rainfall of 73 percent of the normal occurred in 1924.

In the recent years, the district witnesses significant differences in the normal and actual rainfall as presented in Annexure 1.4. It may be observed from Annexure 1.4 that the actual rainfall has been declining in recent years. During 2002 and 2010, the actual rainfall was only 1005.5 mm and 971.1 mm respectively. At least in five years between 2002 and 2013, actual rainfall in the district has been far below the normal rainfall. Month-wise average rainfall of the district from 2007 to 2013 is given in Annexure 1.5. Deviations from the long period average rainfall of the district are also given in the percentage term by month.

1.5 Land and Soil

The total forest area is 496 thousand ha which is about 51 percent of the total geographical area of the district. The total permanent pasture land comprise 26 thousand ha. Barren and un-cultivable land comprises 66 thousand ha. Table 1.3 gives the main land-use patterns in Sundargarh district as in 2013-14.

Cultivable land of the district can be classified into four categories. *Aatt* lands are mainly un-bounded uplands which are less fertile and rain-fed. *Maal* lands are bounded uplands and

² District Gazette, 1993, Government of Odisha.

terraced to catch run-off. *Berna* lands are medium or mid-low lands with average fertility. *Bahal* lands are low lands, which are generally plain fertile lands suitable for paddy cultivation. *Dangar* lands are located on hill slopes and are occasionally utilized for shifting cultivation while *Bari* lands are

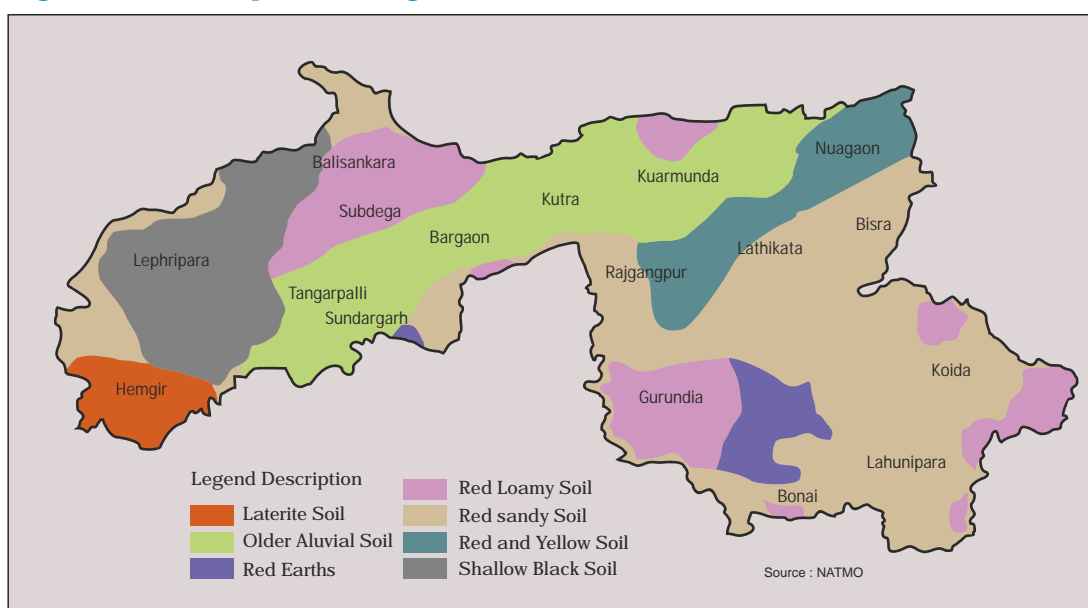
adjacent to homestead lands and are used generally for kitchen gardens and cultivation of fruits and vegetables. The area, along the banks of major rivers namely Brahmani, Sankha and Koel are generally alluvial sandy and sandy loam spills.

Table 1.3: Land Utilisation Patterns in Sundargarh District, 2013-14

Particulars	Units ('000 ha)
Geographical Area	971
Forest Area	496
Misc. Tree and Groves	25
Permanent Pasture	26
Cultivable Wasteland	16
Land Put to Non-Agricultural Use	29
Barren and Un-cultivable Land	66
Net Area Sown	284
Current Fallow	29
Other Fallow	0

Source: Directorate of Agriculture and Food Production Odisha, 2014.

Figure 1.2: Soil Map of Sundargarh District



Soils are mostly acidic to neutral with medium levels of Nitrogen (N), Phosphorous (P) and Potash (K). Table 1.4 presents block-wise type of soils characteristics of the district. The major

soils of the district are red soil (alfisol), laterite and lateritic soils (ultisol and exisol) and black soil (vertisol) with patches of forest soils (humults). Soil map of the district is given in Figure 1.2.

Table 1.4: Block-wise Type of Soil in Sundargarh District, 2013

Sl. No.	Name of Block	Type of Soil	Acidic/Alkaline	Soil depth		PH	Fertility
				Average	Range		
1	Balisankara	Red Laterite, Red, Sandy, Sandy Loams	Acid	1'.9"	1' to 3'	72 percent acid soil	1.54
2	Bargaon	Laterite, Red, Sandy, Sandy Loams	Acid	2'.3"	1' to 3'	68 percent acid soil	1.55
3	Bisra	Red Laterite, Red, Sandy, Sandy Loams	Acid	2'.9"	1' to 3'	87 percent acid soil	1.53
4	Bonaigarh	Laterite, Red, Sandy, Sandy Loams	Acid	2'.11"	1' to 3'	78 percent acid soil	1.54
5	Gurundia	Laterite, Red, Sandy, Sandy Loams	Acid	2'.8"	1' to 3'	88 percent acid soil	1.55
6	Hemgiri	Yellow Laterite, Sandy Loams, Loam	Acid	2'.6"	1' to 3'	87 percent acid soil	1.53
7	Koida	Laterite, Red, Sandy, Sandy loams	Acid	2'.5"	1' to 3'	62 percent acid soil	1.57
8	Kuanarmunda	Red soil, Sandy soil, Sandy Loams	Acid	2'.11"	1' to 3'	78 percent acid soil	1.53
9	Kutra	Red, Sandy, Loams	Acid	2'.4"	1' to 3'	76 percent acid soil	1.58
10	Lahunipada	Red, Sandy Loams	Acid	2'.9"	1' to 3'	88 percent acid soil	1.56
11	Lathikata	Laterite, Red, Sandy, Sandy Loams	Acid	2'.7"	1' to 3'	77 percent acid soil	1.51
12	Lephripada	Yellow, Red, Sandy Loams, Clay Loams	Acid	2'.9"	1' to 3'	65 percent acid soil	1.54
13	Nuagaon	Yellow, Red, Loams, Clay Loams	Acid	2'.10"	1' to 3'	78 percent acid soil	1.52
14	Rajgangpur	Laterite, Red, Sandy, Sandy Loams	Acid	2'.6"	1' to 3'	87 percent acid soil	1.52
15	Subdega	Yellow, Red, Sandy, Sandy Loams	Acid	1'.10"	1' to 3'	65 percent acid soil	1.57
16	Sundargarh	Laterite, Red, Sandy, Sandy Loams	Acid	2'.2"	1' to 3'	78 percent acid soil	1.56
17	Tangarpalli	Red, Sandy, Sandy Loams	Acid	1'.11"	1' to 3'	64 percent acid soil	1.51

Source: Deputy Director, Agriculture, Sundargarh, 2013.

1.6 Rivers and Waterfalls

Brahmani and Ib are two principal rivers of the district. The river Ib originates from the Khudia plateau in the ex-district of Jaspur in Chhattisgarh and enters the district from the north at Tilijora. It passes through Sundargarh and merges in the Hirakud reservoir on Mahanadi at Brajarajnagar of Jharsuguda district. The Tunga and Ichha

rivers along the western bank and the Safei on the eastern bank are the major tributaries of river Ib. The confluence of the Koel and Sankha rivers at Panposh is the beginning of river Brahmani, the second largest river of Odisha. Besides these two major rivers, a number of small natural streams flow throughout the district. Figure 1.3 shows the river map of Sundargarh district.

Figure 1.3: River Map of Sundargarh District



1.7 Forest Resources

The last district Gazetteer highlighted that the forest area of the district was around 60 percent of the total geographical area of the district spreading over 2,665 square miles (5,826 sq km). The reserve forest cover was 995 square miles (2,562 sq km) and protected forest 1,670 square miles (3,264 sq km). The entire forest area was under the administrative control of two forest divisions with headquarters at Bonaigarh and Sundargarh. Sundargarh division comprises of 563 square

miles (1,440 sq km) of reserved forest and 860 square miles (2,200 sq km) of protected forest, whereas, Bonai division has 432 square miles (1,122 sq km) of reserve forest and 810 square miles of (1,064 sq km) protected forest. At present, the district is divided into three forest divisions with headquarters of Sundargarh, Rourkela and Bonai. The current forest area of the district is about 51 percent of the total geographical area of the district in 2010-11. Table 1.5 describes division-wise cover of forest area in the district.

Table 1.5: Classification of Forest Area in Sundargarh District, 2010-11

Forest Classification	Forest Division (Forest Area in sq km)			Total
	Bonai	Rourkela	Sundargarh	
Reserve Forests	1,370.00	669.80	611.78	2,651.58
Un-classified Forests	0.62	1.33	-	1.95
Demarcated Protected Forests	58.96	25.53	52.09	136.58
Un-demarcated Protected Forests	373.07	326.97	9.85	709.89
Other Forests	225.65	52	1,179.67	1,457.32
Total Forest Area	2,028.30	1,075.63	1,853.39	4,957.32

Source: Forest Department, Sundargarh, 2010-11

Forests are of northern tropical dry deciduous type. Sal is the dominant species. The forests are mostly moist and dry peninsular valley sal forest, dry mixed deciduous forest and dry bamboo forest. Bamboo, timber (Bija, Asan and Sal) and kendu leaves are the principal forest produce of the district. Minor forest products like siali leaves, myobalance, char, seeds, broomsticks, kusum seeds, sunari bark, honey, lac, sabai grass, mahua flowers and mahua seeds are the main sources of earning of the tribals and other people living adjacent to forest areas. The management of the entire forest area of the district is looked after by the Sundargarh, Panposh and Bonai Forest Divisions.

1.8 Mineral Resources

The district has a rich mineral resource endowment and occupies prominent place in

the mineral map of the State. Mining activities here date back to 1898 when limestone was exploited in the Bisra region. Then a systematic exploitation of manganese ore at Gadiajore, dolomite at Panposh and limestone at Birmitrapur started during the year 1898, 1912 and 1917 respectively. Later, mining for iron ore, coal and bauxite were also started. The total output of minerals in the district during the year 2000-01 was 688.67 lakh MT and the total number of working mines was 82. Such mining activities have influenced employment generation in the district. Table 1.6 describes extraction of different mineral ores in the district during 2010-11. Production of iron ore is the highest followed by coal, limestone, dolomite and manganese which are major minerals of the district.

Table 1.6: Type of Minerals and Ores Available in Sundargarh District, 2010-11

Type of Minerals/Ores	Number of Working Mines	Area coverage (ha)	Output ('000'M.T.)
Dolomite	3	408.42	1,566.0
Bauxite	2	149.20	44.0
Coal	1	140.84	4,285.0
Fire Clay	1	NA	9.0
Iron Ore	33	6,694.49	16,258.0
Pyroxenite	1	50.66	0.1
Limestone	21	3,852.26	1,590.0
Manganese Ore	13	1,987.36	183.0
Quartz and Quartzite	1	14.67	0.0
Quartz	2	75.18	13.5
Quartz and Silica Sand	1	111.98	0.0
Silica Sand	1	129.42	18.0
Soap Stone	2	166.43	0.2
Total	82	13,780.91	23,966.8

Source: Directorate of Mines, Odisha, 2010-11

1.9 Industry

Prior to independence, the industrial activity in the district was confined to Biramitrapur, basically to limestone quarry. The establishment of a cement factory in the private sector at Rajgangpur in 1951 and a Steel Plant at Rourkela in 1955 in the public sector contributed significantly to the economy of the district and State. During the last decade, a number of large, medium as well as small-scale and ancillary industries have come up at different places in the district. Industries like steel plant at Rourkela, Odisha Industries at Lathikata, fertiliser plant

at Rourkela, Odisha Cement Factory at Rajgangpur and Utkal Machinery at Kansbahal are major establishments in the district. In addition, several small-scale and ancillary industries have also come up in the district. As per the information of Director of Industries, Textile, Handicrafts and Cottage Industries, 407 small scale industrial units, 16 cottage industries and 128 handloom industries existed during 2008-09 in this district. This information has also been summarised in Annexure 1.6. Table 1.7 describes the industrial scenario of the district during 2010-11.

Table 1.7: Industries Scenario in Sundargarh District, 2010-11

Head	Particulars
Number of Registered Industrial Units	4,182
Number of Total Industrial Units	11,171
Number of Registered Medium and Large Units	75
Estimated Number of Daily Workers Employed in Small Scale Industries	81,229
Number of Employment in Large and Medium Industries	49,558
Number of Industrial Areas	6
Investment in Small Scale Industries (Rs crore)	534.64
Investment in Medium and Large Scale Industries (Rs crore)	10837.38

Source: Director of Industries, Odisha (as on 2010-11); MSME Report of the District

1.10 Transport and Communication

Good roads and transport networks are considered essential to accelerate the pace of development of any region. The total road length of different types of roads in Sundargarh vis-a-vis other districts reflects that the district is in a better situation in comparison to many other districts of the State. The district has 168 kms of national highway, 218 kms of state highways and 297 kms of major district roads, 516 kms of other district roads and 688 km of forest roads. The

total length of Gram Panchayat roads is 7,682 kms and that of Panchayat Samiti roads is 3,067 kms. All blocks of Sundargarh district except Gurundia and Koida blocks are well connected by roads. Rourkela is the main town of the district. NH-23 and NH-215 pass through the district and connect the district to Jharkhand State and Angul district of Odisha. Table 1.8 describes the detailed road length of the district in 2013-14. Figure 1.4 provides the transport and railway map of the district.

Table 1.8: Transportation and Communication Facilities in Sundargarh District, 2013-14

Road Classification	Road Length (kms)
National Highways	168.01
State Highways	217.78
Major District Roads	296.74
Other District Roads	516.16
Rural Roads	1244.70
Gram Panchayat Roads*	7682.21
Panchayat Samiti Roads*	3066.93
Forest Roads	687.55
Railway Route Length	262.00
Number of Railway Station and PH (Number)	30.00

Source: Directorate of Economics and Statistics Odisha, 2015. Note: * Figures are as per 2009-10

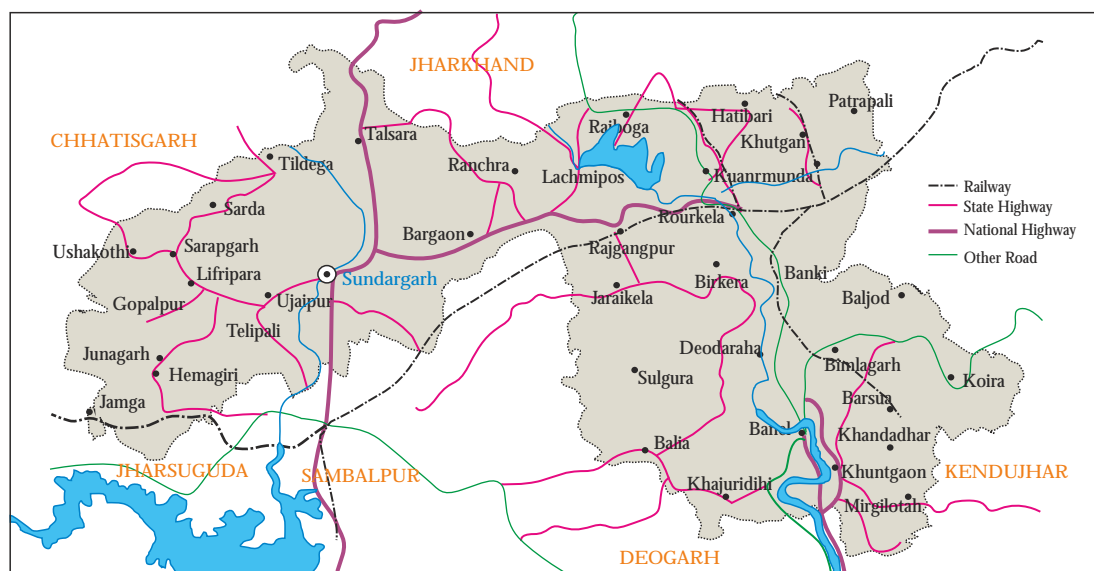
The rural connectivity in the district has improved substantially. Many gram panchayats and villages, which did not have connectivity, have since been connected with gram panchayat and panchayat samiti roads. Pradhan Mantri Gram Sadak Yojana (PMGSY) has played a significant role in providing connectivity to different villages in the district. (Block-wise length of roads by road types) is given in Annexure 1.7. However, 287 number of villages belongs to 96 Gram Panchayats are yet to be connected effectively. The distribution of such villages by block /GP is given in Table 1.9.

Table 1.9: Number of Villages without Connectivity in Sundargarh District, 2013

S. No.	Name of Block	Number of Gram Panchayat	Number of Village
1	Balisankara	3	9
2	Bargaon	-	-
3	Bisra	12	33
4	Bonaigarh	-	-
5	Gurundia	2	5
6	Hemgiri	14	22
7	Koida	4	13
8	Kuanrunda	20	103
9	Kutra	16	60
10	Lahunipada	5	12
11	Lathikata	4	8
12	Lephripada	6	11
13	Nuagaon	5	5
14	Rajgangpur	2	3
15	Subdega	-	-
16	Sundargarh Sadar	-	-
17	Tangarpali	3	3
	Total	96	287

Source: DRDA, Sundargarh as per the information of GPs, 2013.

Figure 1.4: Transport and Railway Map of Sundargarh District



1.11 Demographic Profile

According to the 2011 census, total population of the district is 20.93 lakh, which is 4.99 percent of the total population of the State. Out of the total population, 50.69 percent is male population, and 49.31 percent female population. The population of the district has increased from 2.7 lakh in 1901 to 20.93 lakh in 2011, an increase of more than seven times over 110 years. As per 2011 census, the decadal growth rate was 16.34

percent between 1991 and 2001 and 14.35 percent between 2001 and 2011 as may be seen from Table 1.10. The density of population is about 216 persons per sq km, which is much lower than the State average of 269 persons per sq km. as per 2011 census. However, there is an improvement in the density of population from 188 in 2001 to 216 in 2011 census. Socio-economic and demographic profile of the district may be seen in the Annexure 1.8.

Table 1.10: Demographic Indicators of Sundargarh District and Odisha, 1901-2011

Year	Total Population		Decadal Growth Rate (%)		Sex Ratio		Child Sex Ratio (0-6 years)	
	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha
1901	277,173	10,302,917	-	-	959	1,037	-	-
1911	362,138	11,378,875	30.65	10.44	988	1,056	-	-
1921	377,449	11,158,586	4.23	-1.94	1,004	1,086	-	-
1931	436,860	12,491,056	15.74	11.94	1,013	1,067	-	-
1941	490,708	13,767,988	12.33	10.22	1,017	1,053	-	-
1951	552,203	14,645,946	12.53	6.38	1,012	1,022	-	-
1961	758,617	17,548,846	37.38	19.82	915	1,001	-	-
1971	1,030,758	21,944,615	35.87	25.05	942	988	-	-
1981	1,337,871	26,370,271	29.79	20.17	931	981	931	995
1991	1,573,617	31,659,736	17.62	20.06	936	971	967	967
2001	1,830,673	36,706,970	16.34	15.94	957	972	970	953
2011	2,093,437	41,974,218	14.35	14.05	973	979	946	941

Source: Census of India, (various years).

The district has a sex ratio (female per 1000 male population) of 973 as per 2011 census, which is 16 point higher than 957 in 2001. However, the overall sex ratio in the district has been fluctuating over the years. The overall sex ratio of the district declined from 1,017 in 1941 to 973 in 2011. Overall sex ratio is marginally less compared to the State average of 979 in 2011. The child sex ratio (0-6 year age group) of the district is 946 in 2011, which is marginally better than the State average of 941 during the same period. Table 1.10 summaries some demographic indicators of Sundargarh district and Odisha for the period 1901-2011. As per 2011 census, the rural and urban population of the district is 64.7 percent and 35.3 percent respectively as may be seen from Table 1.11, which

analyses the change in rural and urban population between 1951 and 2011. The rural population of the district has decreased by 0.89 percent in 2011 in comparison to 2001. Urban settlements have been on the rise in Sundargarh and the district reports urban population higher than the State average of 16.7 percent. The district recorded a growth of 13.4 percent in male and 15.3 percent in female population during the period from 2001 to 2011. Further, decadal population growth rate of male and female in rural areas is 12.2 percent and 13.4 percent respectively. In urban areas, population growth rate of male and female is estimated to be 15.6 percent and 19.2 percent respectively during the same period. Year-wise rural and urban population is given in the Table 1.11.

Table 1.11: Year-wise Distribution of Rural and Urban Population of Sundargarh District, 1951-2011

Year	Population (No.)			Population (%)	
	Rural	Urban	Total	Rural	Urban
1951	536,836	15,367	552,203	97.2	2.8
1961	622,857	135,760	758,617	82.1	17.9
1971	791,078	239,680	1,030,758	76.8	23.3
1981	934,812	403,059	1,337,871	69.9	30.1
1991	1,048,612	525,005	1,573,617	66.6	33.4
2001	1,201,524	629,149	1,830,673	65.6	34.4
2011	1,355,340	738,097	2,093,437	64.7	35.3

Source: Odisha District Gazetteers, Gazetteer of India, Sundargarh, 1975; Statistical Handbooks of various years and Census of India, 2011, Odisha Series 22

Table 1.12: Scheduled Castes and Scheduled Tribes Population of Sundargarh District, 2011

Social Group	Rural/ Urban/ Total	Persons	Males	Females	Percent to Total Population	Decadal Growth Rate	Sex Ratio
Scheduled Castes Population	Rural	115,853	57,762	58,091	8.5	12.7	1,006
	Urban	75,807	38,703	37,104	10.3	38.0	959
	Total	191,660	96,465	95,195	9.2	21.5	987
Scheduled Tribes Population	Rural	908,475	450,276	458,199	67.0	13.9	1,018
	Urban	153,874	76,580	77,294	20.8	27.1	1,009
	Total	1,062,349	526,856	535,493	50.7	15.6	1,016

Source: Census of India, 2011.

Sundargarh has sizeable Scheduled Tribes (ST) population and main tribal communities are Munda, Kharia, Kisan, Bhuyan, Oram and Gond. The Kisan tribe dominates in the district. They speak several languages including kisan, sadri, sambalpuri, odiya, and hindi. In addition, Mundari, Ho, Santali, Kurukh and Kharia languages are also spoken. They are farmers and gatherers of forest products. As per 2011 census, the percentage of Scheduled Tribes population in the district is 50.7 percent as may be seen from Table 1.12. Of the total ST population, male population comprises 49.6 percent and female population 50.4 percent. Decadal growth in the tribal population is 15.6 percent

with 13.9 percent growth in rural areas and 27.1 percent in urban areas. Overall sex ratio among the tribals is 1,016 female per 1,000 male population in 2011, which is 13 point higher than the tribal sex ratio in 2001 but less than the tribal sex ratio of the State average of 1,029 in 2011. In urban areas, the tribal sex ratio increased from 983 in 2001 to 1,009 in 2011, marked above the State average of 991 in 2011. Table 1.13 shows block and urban area-wise Scheduled Tribe population of Sundargarh district as per 2001 census. Out of 17 Blocks, five blocks have more than 70 percent of Scheduled Tribe population in the district.

Table 1.13: Scheduled Tribe Population by Block and Urban Areas, 2001

S. N.	Name of Block/ULB	Total Population			Total Scheduled Tribe Population			Scheduled Tribe Population (%)		
		Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
Block										
1	Balisankara	76,759	37,857	38,902	52,016	25,525	26,491	67.8	67.4	68.1
2	Bargaon	64,676	32,436	32,240	40,718	20,255	20,463	63.0	62.5	63.5
3	Bisra	76,619	38,999	37,620	40,258	20,192	20,066	52.5	51.8	53.3
4	Bonaigarh	62,476	31,389	31,087	33,801	16,921	16,880	54.1	53.9	54.3
5	Gurundia	57,801	28,869	28,932	46,457	23,200	23,257	80.4	80.4	80.4
6	Hemagiri	75,694	38,420	37,274	35,513	17,928	17,585	46.9	46.7	47.2
7	Koida	71,705	36,633	35,072	51,592	26,070	25,522	72.0	71.2	72.8
8	Kuanarmunda	87,342	43,880	43,462	68,118	34,106	34,012	78.0	77.7	78.3
9	Kutra	71,152	35,587	35,565	54,543	27,153	27,390	76.7	76.3	77.0
10	Lahunipada	85,019	42,445	42,574	55,621	27,695	27,926	65.4	65.3	65.6
11	Lathikata	122,756	63,149	59,607	74,148	37,243	36,905	60.4	59.0	61.9
12	Lephripada	71,605	36,032	35,573	41,263	20,615	20,648	57.6	57.2	58.0
13	Nuagaon	91,478	45,749	45,729	59,469	29,520	29,949	65.0	64.5	65.5
14	Rajgangpur	90,692	45,337	45,355	73,749	36,674	37,075	81.3	80.9	81.7
15	Subdega	57,420	28,555	28,865	39,827	19,619	20,208	69.4	68.7	70.0
16	Sundargarh	63,857	32,066	31,791	33,099	16,469	16,630	51.8	51.4	52.3
17	Tangarpalli	58,284	29,281	29,003	30,231	15,243	14,988	51.9	52.1	51.7
	Total	1,285,335	646,684	638,651	830,423	414,428	415,995	64.6	64.1	65.1
ULB										
1	Biramitrapur	29,447	14,937	14,510	10,862	5,320	5,542	36.9	35.6	38.2
2	Rajgangpur	43,594	22,464	21,130	9,836	4,634	5,202	22.6	20.6	24.6
3	Rourkela	433,876	231,813	202,063	58,111	29,740	28,371	13.4	12.8	14.0
4	Sundargarh	38,421	19,703	18,718	9,671	4,693	4,978	25.2	23.8	26.6
	Total	545,338	288,917	256,421	88,480	44,387	44,093	16.2	15.4	17.2
	Sundargarh Dist.	1,830,673	935,601	895,072	918,903	458,815	460,088	50.2	49.0	51.4

Source: Census of India 2001

Sex ratio among Scheduled Castes is 987 in 2011, which is seven points higher than the sex ratio of 980 in 2001. Further, the rural sex ratio of SC is 1006 in 2011 against the urban sex ratio of 959 in 2011 (Table 1.12). Table 1.14 displays the Scheduled Caste population

by Blocks and urban areas as per 2001 census. It may be observed from Table 1.14 that Tangarpalli, Hemagiri, and Sundargarh blocks had more than 14 percent Scheduled Caste population and Biramitrapur urban local body had 17.3 percent.

Table 1.14: Scheduled Caste Population in Sundargarh District, 2001

S. N.	Name of Block/ULB	Total Scheduled Caste Population			Scheduled Caste Population (%)		
		Persons	Males	Females	Persons	Males	Females
Block							
1	Balisankara	6,890	3,441	3,449	9.0	9.1	8.9
2	Bargaon	5,043	2,535	2,508	7.8	7.8	7.8
3	Bisra	4,108	2,096	2,012	5.4	5.4	5.4
4	Bonaigarh	7,843	3,830	4,013	12.6	12.2	12.9
5	Gurundia	3,196	1,570	1,626	5.5	5.4	5.6
6	Hemagiri	10,754	5,389	5,365	14.2	14.0	14.4
7	Koida	4,431	2,249	2,182	6.2	6.1	6.2
8	Kuanarmunda	5,347	2,657	2,690	6.1	6.1	6.2
9	Kutra	5,189	2,615	2,574	7.3	7.4	7.2
10	Lahunipada	5,404	2,672	2,732	6.4	6.3	6.4
11	Lathikata	7,043	3,572	3,471	5.7	5.7	5.8
12	Lephripada	8,991	4,532	4,459	12.6	12.6	12.5
13	Nuagaon	6,272	3,130	3,142	6.9	6.8	6.9
14	Rajgangpur	5,212	2,596	2,616	5.8	5.7	5.8
15	Subdega	4,883	2,416	2,467	8.5	8.5	8.6
16	Sundargarh	9,263	4,716	4,547	14.5	14.7	14.3
17	Tangarpalli	8,626	4,323	4,303	14.8	14.8	14.8
	Total	108,495	54,339	54,156	8.4	8.4	8.5
ULB							
1	Biramitrapur	5,013	2,501	2,512	17.0	16.7	17.3
2	Rajgangpur	3,803	1,958	1,845	8.7	8.7	8.7
3	Rourkela	36,910	19,112	17,798	8.5	8.2	8.8
4	Sundargarh	3,524	1,771	1,753	9.2	9.0	9.4
	Total	49,250	25,342	23,908	9.0	8.8	9.3
	Sundargarh Dist.	157,745	79,681	78,064	8.6	8.5	8.7

Source: Census of India 2001

Child population of the district in the age group of 0-6 year is 2.64 lakh with male child population of 1.34 lakhs and female child population of 1.30 lakh. The proportion of child population to the total population of the district shows a declining trend between 2001 and 2011. The percentage of child

population to the total district population during 2011 is 12.57 while it was 14.47 in 2001. In both male and female categories, the district recorded a reduction in proportion of children in the age group of 0-6 year. The male child population to the total male population was 14.38 percent in 2001, and has

reduced to 12.74 percent in 2011. Male child population in the age group of 0-6 year to total population of the district was 6.46 percent in 2011 against 7.35 percent in 2001 census. The proportion of female child to the total female population was 14.57 in 2001, and declined to 12.40 in 2011. Further, female child population to the total population in 2001 was 7.13 percent, which has reduced to

6.11 percent in 2011. The child sex ratio (0-6 year age group) has declined from 967 in 1991 to 946 in 2011 per 1,000 male child population as may be seen from Table 1.15. The overall sex ratio and child sex ratio for Sundargarh district have been compared with those of the State in Table 1.15 from 1991 to 2011. Table 1.16 analyses sex ratio by social classes and by Blocks/urban areas.

Table 1.15: Sex Ratio and Child Sex Ratio in Sundargarh District; 1991 - 2011

Year	Rural/ Urban/ Total	Sex Ratio		Child Sex Ratio (0-6 years)	
		Sundargarh	Odisha	Sundargarh	Odisha
1991	Rural	987	988	983	969
	Urban	842	866	930	949
	Total	936	971	967	967
2001	Rural	994	987	982	955
	Urban	889	895	940	933
	Total	957	972	970	953
2011	Rural	1005	989	966	946
	Urban	917	932	903	913
	Total	973	979	946	941

Source: Census of India, 1991, 2001 and 2011

Table 1.16: Block/ULB-wise Sex Ratio among Social Group of Sundargarh District, 2001

SL. No	Name of Block/ULB	Sex Ratio		
		All Community	Scheduled Caste	Scheduled Tribe
Block				
1	Balisankara	1,028	1,002	1,038
2	Bargaon	994	989	1,010
3	Bisra	965	960	994
4	Bonaigarh	990	1,048	998
5	Gurundia	1,002	1,036	1,002
6	Hemagiri	970	996	981
7	Koida	957	970	979
8	Kuanarmunda	990	1,012	997
9	Kutra	999	984	1,009
10	Lahunipada	1,003	1,022	1,008
11	Lathikata	944	972	991
12	Lephripada	987	984	1,002
13	Nuagaon	1,000	1,004	1,015
14	Rajgangpur	1,000	1,008	1,011
15	Subdega	1,011	1,021	1,030
16	Sundargarh	991	964	1,010
17	Tangarpalli	991	995	983
ULB				
1	Biramitrapur	971	1,004	1,042
2	Rajgangpur	941	942	1,123
3	Rourkela	872	931	954
4	Sundargarh	950	990	1,061
	Sundargarh District	957	980	1,003

Source: Census of India, 2001

1.12 Culture and Language

The district has diverse culture and languages. People observe Nuakhai or Nabarnna, which is an agricultural festival and mainly observed by the people of Western Odisha, including Sundargarh. It is observed to welcome the new paddy/rice of the season. Karma is also celebrated by both Hindus and Christians. Ratha Yatra of Lord Jagannath is also celebrated at places having Jagannath temple. Ramnavami festival is observed at different places like Bargaon, and Rajgangpur. At Bargaon, where the festival and cultural programs are performed, the village enact the entire story of Ramayana in open and multiple stages. Nam Sankirtana is a form of worship of Lord Krishna and Lord Rama in a gathering as per Odiya Vashnavite philosophy. The main language spoken in this region is Odiya which is known as "Sundargarhia Odiya" with a variation to other major dialects or Odiya spoken in western part of Odisha. People of Agariya community speak Agariya language, which is mix of Odiya and Hindi. In the border areas of the district, people speak Agariya, as most of the population are Agariya. Hindi is understood and spoken by people of the district due to its close proximity to Jharkhand and Chhattisgarh states.

1.13 Occupations

The people within the working age group are

classified as workers and non-workers. The workers are further classified as main workers and marginal workers. As per the census classification, the working people are categorised as cultivators, agricultural labourers, household industry workers and other workers. As per 2011 census, there are 41.7 percent workers and 58.3 percent non-workers. There is an increase of about 1.3 percent of workers between 2001 and 2011 census. Out of the total workers, 61.30 percent are main workers and 38.70 percent are marginal workers as per 2011 census as may be seen from Table 1.17. Among total workers, 21.10 percent are cultivators, 29.00 percent agricultural labourers, 3.10 percent household industry workers, and 46.80 percent other workers. The proportion of main workers has been declining over the time. There were 65.0 percent main workers in 2001. They declined to 61.3 percent in 2011. The proportion of marginal workers to total worker has increased from 35.0 percent in 2001 to 38.7 percent in 2011. Male main workers have come down from 81.0 percent in 2001 to 73.7 percent in 2011, whereas female main workers have increased from 35.3 percent in 2001 to 36.2 percent in 2011. A reverse trend is marked in marginal worker category. There is an increase in male marginal workers. Table 1.17 gives the status of work participation rate by residence and sex in Sundargarh district in 2001 and

Table 1.17: Year-wise Work Participation Rate in Sundargarh District, 2001 - 2011

Year	Rural/ Urban/ Total	Work Participatio n Rate	Percentage of Main Worker to Total Worker			Percentage of Marginal Worker to Total Worker		
			Total	Males	Females	Total	Males	Females
2001	Rural	46.6	56.6	75.2	30.9	43.4	24.8	69.1
	Urban	28.4	91.2	93.0	79.1	8.8	7.0	20.9
	Total	40.4	65.0	81.0	35.3	35.0	19.0	64.7
2011	Rural	46.2	50.5	64.4	28.9	49.5	35.6	71.1
	Urban	33.6	88.6	91.0	77.3	11.4	9.0	22.7
	Total	41.7	61.3	73.7	36.2	38.7	26.3	63.8

Source: Census of India, 2001, and 2011

2011. The composition of main and marginal workers by block and urban areas has been given in Table 1.18 for 2001 census.

The demographic analysis of Sundargarh brings out interesting observations. The district is dominated by Scheduled Tribe communities, which form more than half of the district population. Second, the district

has higher urban population than the State average. The population density of the district is, however, lower than the State population density as per 2011 census. Sex ratio in the district is also lower than other tribal dominated districts. Further, the child sex ratio in the 0-6 year age group has been declining over the years. This is a matter of serious concern.

Table 1.18: Block-wise Population and Worker Composition in Sundargarh District, 2001

SN	Name of Block/ULB	Total Number of Workers			Percentage of Total Workers to Total Population	Percentage of Main Workers to Total Workers	Percentage of Marginal Workers to Total Workers
		All Workers	Main Workers	Marginal Workers			
Block							
1	Balisankara	38,616	20,480	18,136	50.3	53.0	47.0
2	Bargaon	30,222	17,286	12,936	46.7	57.2	42.8
3	Bisra	27,366	18,135	9,231	35.7	66.3	33.7
4	Bonaigarh	30,419	15,631	14,788	48.7	51.4	48.6
5	Gurundia	29,356	13,111	16,245	50.8	44.7	55.3
6	Hemgiri	41,510	23,236	18,274	54.8	56.0	44.0
7	Koida	30,248	20,817	9,431	42.2	68.8	31.2
8	Kuanarmunda	39,515	20,246	19,269	45.2	51.2	48.8
9	Kutra	30,988	18,477	12,511	43.6	59.6	40.4
10	Lahunipada	38,973	20,198	18,775	45.8	51.8	48.2
11	Lathikata	46,289	32,151	14,138	37.7	69.5	30.5
12	Lephipada	37,861	20,733	17,128	52.9	54.8	45.2
13	Nuagaon	38,383	23,516	14,867	42.0	61.3	38.7
14	Rajgangpur	29,663	19,728	9,935	32.7	66.5	33.5
15	Subdega	27,609	14,349	13,260	48.1	52.0	48.0
16	Sundargarh	36,798	21,452	15,346	57.6	58.3	41.7
17	Tangarpalli	29,420	17,396	12,024	50.5	59.1	40.9
	Total	583,236	336,942	246,294	45.4	57.8	42.2
ULB							
1	Biramitrapur	8,703	7,133	1,570	29.6	82.0	18.0
2	Rajgangpur	11,825	10,589	1,236	27.1	89.6	10.5
3	Rourkela	124,002	115,645	8,357	28.6	93.3	6.7
4	Sundargarh	11,037	9,825	1,212	28.7	89.0	11.0
	Total	155,567	143,192	12,375	28.5	92.1	8.0
	Sundargarh District	738,803	480,134	258,669	40.4	65.0	35.0

Source: Census of India, 2001. Note: Block wise data for 2011 census is not available

1.14 Education Scenario

Education is one of the important indicators of development. The overall literacy in Sundargarh district has increased from 36.17 percent in 1981 to 73.3 percent in 2011, which is marginally higher than the State average of 72.87 percent. The male literacy rate is 81.0 percent and female literacy rate 65.5 percent as may be seen from Table 1.19. Male literacy in Sundargarh increased from 47.36 percent

in 1981 to 81.01 percent in 2011 against the State average of 81.59 percent. Female literacy has remained relatively low, but has increased substantially from 24.15 percent in 1981 to 65.48 percent in 2011 and is above the State average of 64.0 percent. There is a wide gender disparity in literacy rates in the district. The gap of 15.5 percentage points between male and female literacy rates in 2011 is because of various factors, including socio-economic characteristics of the district.

Table 1.19: The Status of Literacy in Sundargarh District; 1991-2011

Year	Rural/ Urban/ Total	Literates			Literacy Rate (%)		
		Persons	Males	Females	Persons	Males	Females
1991	Rural	359,246	240,344	118,902	41.6	55.3	27.7
	Urban	334,579	203,485	131,094	75.0	83.3	64.9
	Total	693,825	443,829	249,996	53.0	65.4	39.6
2001	Rural	560,811	342,715	218,096	55.3	67.4	43.1
	Urban	454,674	260,795	193,879	82.5	89.0	75.0
	Total	1,015,485	603,510	411,975	64.9	75.3	53.9
2011	Rural	782,147	441,493	340,654	66.6	75.6	57.7
	Urban	560,175	308,654	251,521	85.3	90.2	80.0
	Total	1,342,322	750,147	592,175	73.3	81.0	65.5

Source: Census of Odisha, 1991, 2001 and 2011

1.15 Health Status

The district has 546 healthcare institutions including two district level hospitals, six sub-divisional level hospitals, 20 community health centres, 56 primary health centres, 390 health sub-centres, 33 ayurvedic hospitals and dispensaries and 25 homoeopathic hospitals and dispensaries. Various hospitals have 635

beds for in-door patients. Currently about 72 percent villages in the district have health sub-centres. Table 1.20 describes the availability of healthcare facilities in Sundargarh district. Improved health infrastructure and government efforts have helped improve health indicators and health awareness.

Table 1.20: Healthcare Facilities in Sundargarh District, as on 31st March 2013

Health Facilities	Units
Medical College / District HQ Hospitals	2
Sub-Divisional and Other Hospitals	6
Community Health Centres	20
Primary Health Centres (New)	56
Health Sub-Centres	390
Mobile Health Units	14
Beds in Hospitals	635
Ayurvedic Hospitals and Dispensaries	33
Homoeopathic Hospitals and Dispensaries	25

Source: Directorate of Economics and Statistics Odisha, 2014

The Crude Birth Rate (CBR) is expressed as the number of live births per 1,000 population and is a common measure of fertility for a given population. The Crude Birth Rate is called "crude" because it does not take into account age or sex differences among the population. According to Annual Health Survey, the Crude Birth Rates is 17.8

per 1000 population during 2012-13, whereas the average of State is 19.6. However, the CBR ranged from 18.2 in 2010-11 to 17.8 in 2012-13 in Sundargarh district. This indicates that mean birth rate are gradually declining over the period. Table 1.21 summaries CBR, CDR and Sex Ratio at birth in the district from 2010-11 to 2012-13.

Table 1.21: Status of Crude Birth Rate, Crude Death Rate, and Sex Ratio at Birth in Sundargarh District and Odisha, 2010-13

Years	Crude Birth Rate		Crude Death Rate		Sex Ratio at Birth	
	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha
AHS-1 (2010-11)						
Rural	19.1	20.4	8.8	8.7	921	905
Urban	16.3	17.9	4.1	6.4	850	905
Total	18.2	20.0	7.2	8.3	900	905
AHS-2 (2011-12)						
Rural	19.1	20.2	8.5	8.6	912	902
Urban	15.6	17.7	4.5	6.5	866	911
Total	17.9	19.8	7.2	8.2	899	903
AHS-3 (2012-13)						
Rural	18.8	20.0	8.5	8.5	912	907
Urban	15.5	17.4	4.6	6.4	883	916
Total	17.8	19.6	7.2	8.1	904	908

Source: AHS-1, 2010-11, Odisha; AHS-2, 2011-12, Odisha; AHS-3, 2012-13, Odisha

The Crude Death Rate (CDR) is typically expressed as the number of deaths per 1,000 population. CDR is a common measure of mortality for a given population. According to Annual Health Survey, the crude death rate is 7.2 per 1,000 population during 2012-13, whereas the average of State is 8.1 per 1,000 population. There is no reduction in the crude death rate in the district between 2010-11 and 2012-13, while marginal reduction has been observed at the State level.

Sex Ratio at Birth (SRB) is defined as the number of girls born for every 1,000 boys born and is a more accurate indicator of the degree of prenatal sex selection. The comparison of observed sex ratio at birth with normal sex ratio at birth gives an idea of girls missing at birth. As per the Annual

Health Survey, 2012-13, the sex ratio at birth in Sundargarh district is 904, while the globally observed normal sex ratio at birth is 952 or more girls born per 1000 boys. The sex ratio at birth at the district level increased from 900 in 2010-11 to 904 in 2012-13 and similar trend has been observed in the State of Odisha. Table 1.21 compare sex ratio at birth in Sundargarh and Odisha for different years.

Full immunisation coverage in the district has increased from 59.0 percent in 2002-04 to 79.8 percent in 2011-12. Infant Mortality Rate (IMR) has gone down to 47 in 2012-13 and neo-natal mortality rate has reduced to 33 in 2012-13. Under Five Mortality Rate (U5MR) has also reduced from 65 in 2010-11 to 57 in 2012-13. With increased consciousness and

awareness, mean age at marriage of girls have increased in the district from 20.5 years in 2002-04 to 23.0 years in 2012-13. With increased focus on maternal health care, the Maternal Mortality Ratio in the district has come down to 234 in 2012-13 from 253 in 2010-11. Institutional deliveries have increased from 33.6 percent in 1998-99 to 80.9 percent in 2012-13.

1.16 District Development Indicators

Education, health and income are important indicators that determine the human development status. According to the Odisha human development report, 2004, the value of Human Development Index (HDI) for Sundargarh district was 0.683, which was higher than the State average (0.579). Out of

30 districts, Sundargarh district had ranked fourth. Of the three human development indicators (i.e., education, health and income), the education index was 0.740 which was marginally higher than the State average (0.723). The health index was 0.692 which was also higher than the State average (0.468) and the income index was 0.618 which was also higher than the State average (0.545). There is, however, considerable scope to further improve human development indicators in the district. The indicators are not uniformly distributed across the district. There are considerable disparities in different parts of the district. There are also social and gender disparities as far as human development indicators are concerned.





CHAPTER 2

Poverty and Livelihoods

“Do not inhabit a country where you are not respected, cannot earn your livelihood, have no friends, or cannot acquire knowledge. ”

-Chanakya



Poverty and Livelihoods

2.1 Introduction

The concept of “human development” keeps the people at the centre stage and focuses, amongst other things, on the choices that people make for leading comfortable standards of living. The options available, and approaches followed, for livelihoods shape the access of the people to incomes, goods and services that are needed to meet their multiple needs. Poverty, on the other hand, implies inter alia lack of adequate resources and means for comfortably

sustaining lives. Poverty is also a measure of deprivation. In fact, the first Millennium Development Goal (MDG) is about "Eradication of Extreme Poverty and Hunger". Targets and indicators for the first MDG are summarised in Box 2.1. This chapter analyses livelihoods opportunities that are available to the people of Sundargarh district. It also discusses the steps taken by Government to tackle hunger and malnutrition and to strengthen people's livelihoods and food security.

Box 2.1 MDG 1: Eradicate Extreme Poverty and Hunger

Target 1(a): Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day.

- Poverty Headcount Ratio (percentage of population below the national poverty line)
- Poverty Gap Ratio
- Share of poorest quintile in national consumption

Target 1(b): Achieve full and productive employment and decent work for all, including women and young people

- Growth rate of Gross Domestic product (GDP) per person employed
- Employment -to-population ratio
- Proportion of employed people living below \$1 (Purchasing Power Parity) per day
- Proportion of own-account and contributing family workers in total employment

Target 1(c): Halve, between 1990 and 2015, the proportion of people who suffer from hunger

- Prevalence of underweight children under three years of age
- Proportion of population below minimum level of dietary energy consumption

2.2 District Economic Structure

The Gross District Domestic Product (GDDP) of Sundargarh district increased by 136 percent from Rs.601,481 lakh in 2004-05 to Rs.1,420,007 lakh in 2009-10 at current prices. In real terms, the GDDP of Sundargarh district increased by 68 percent from Rs.601,481 lakh in 2004-05 to 1,010,647 lakh in 2009-10 at 2004-05 prices. The Net District Domestic Product (NDDP) of the district for the year 2004-05 was estimated at Rs.479,123 lakh against the GDDP of Rs.601,481 lakh for the same year. Chart 2.1

depicts GDDP of Sundargarh district both at current and 2004-05 prices from 2004-05 to 2009-10. Table 2.1 analyses annual growth rates of GDDP and NDDP for Sundargarh district from 2005-06 to 2009-10 at current and constant (2004-05) prices and compares the same with those the State growth rates. It may be observed from Table 2.1 that annual growth rates of GDDP and NDDP fluctuated widely from year to year. However, the average growth rates of GDDP and NDDP of the district remained generally higher than those for the State for the same period.

Chart 2.1: Gross District Domestic Product, Sundargarh District: 2004-05 to 2009-10

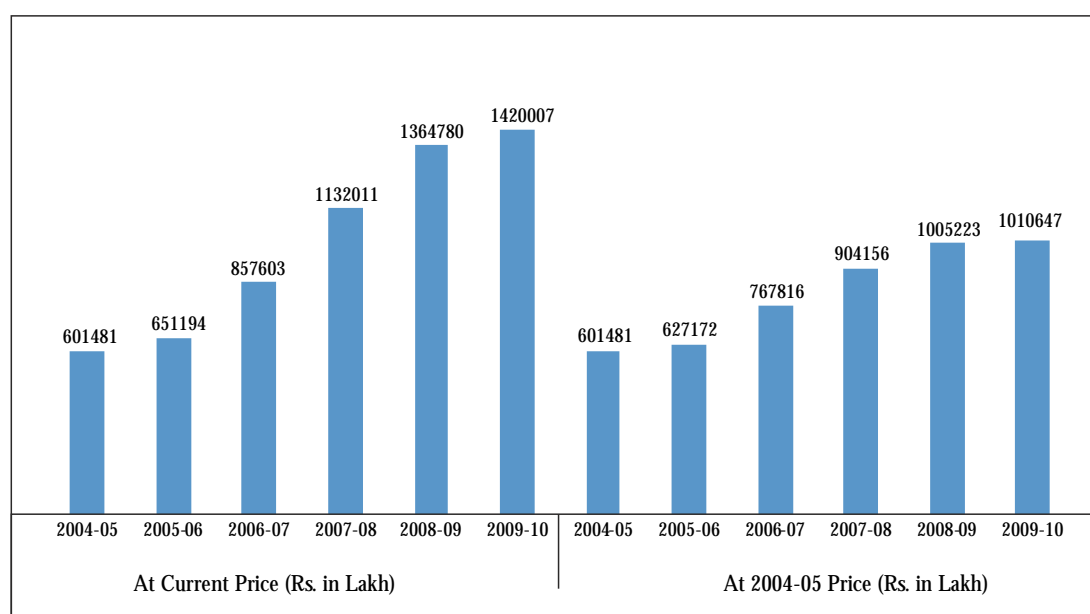


Table 2.1: Growth Rates of the District and State Economies: 2005-06 to 2009-10

Year	Growth Rates (Percent, Current Price)				Growth Rates (Percent, 2004-05 Price)			
	GDDP		NDDP		GDDP		NDDP	
	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha
2005-06	8.27	9.48	3.75	8.18	4.27	5.68	-0.10	4.44
2006-07	31.70	19.68	32.27	19.54	22.43	12.85	22.22	12.45
2007-08	32.00	26.94	29.38	26.37	17.76	10.94	12.12	8.58
2008-09	20.56	14.86	21.27	14.77	11.18	7.75	10.98	7.51
2009-10	4.05	9.74	-9.75	6.53	0.54	4.55	-15.61	0.81
Average growth rates	19.32	16.14	-	-	11.24	8.35	-	-

Source: Odisha Economic Survey, 2012-13

The sectoral composition of district economy is analysed, both at current prices and in real terms at constant prices of 1999-2000, in Table 2.2 for the period from 2000-01 to 2004-05. It may be observed from Table 2.2 that the industrial sector has a sizable presence in the district economy and is much higher than the State averages over the years. The district economy is dominated by the manufacturing sub-sector. The share of the Agriculture Sector in the Gross District

Domestic Product is of the order of 18 percent in real terms at 1999-2000 prices, variation being 22.83 percent in 2001-02 to 15.94 percent in 2004-05. The share of the Industrial Sector is of the order of 32 percent in real terms at 1999-2000 prices, variation being 21.77 percent in 2001-02 to 37.54 percent in 2004-05. The share of the Service Sector is of the order of 50 percent in real terms at 1999-2000 prices, variation being 55.40 percent in 2001-02 to 46.52 percent in 2004-05.

Table 2.2: Sectoral Composition of District Economy in Sundargarh: 2000-01 to 2004-05

Sectors	2000-01		2001-02		2002-03		2003-04		2004-05	
	GDDP	GDDP	GDDP	GDDP	GDDP	GDDP	GDDP	GDDP	GDDP	GDDP
	Current Price	1999-00 Price	Current Price	1999-00 Price	Current Price	1999-00 Price	Current Price	1999-00 Price	Current Price	1999-00 Price
Agriculture Sector	15.86	16.22	22.03	22.83	17.14	16.84	18.36	17.90	16.57	15.94
Agriculture	12.14	12.59	17.73	18.59	13.86	12.94	14.74	14.57	13.78	13.04
Forestry and Logging	3.35	3.30	3.77	3.77	2.81	3.48	3.20	2.93	2.44	2.56
Fishing	0.37	0.33	0.53	0.47	0.47	0.42	0.42	0.40	0.35	0.34
Industrial Sector	36.16	35.87	22.18	21.77	31.23	31.49	32.64	32.63	38.19	37.54
Mining and Quarrying	5.82	5.85	6.33	6.21	5.43	5.53	6.36	6.51	7.09	6.68
Manufacturing	28.26	28.17	13.30	13.46	24.31	24.74	23.96	24.25	28.65	28.90
Registered MFG.	26.83	26.68	11.82	11.89	23.02	23.40	22.79	23.04	27.67	27.89
Unregistered MFG.	1.43	1.49	1.48	1.57	1.28	1.34	1.17	1.21	0.98	1.02
Electricity, Gas and W. Supply	2.08	1.85	2.55	2.10	1.49	1.22	2.32	1.87	2.45	1.96
Services Sector	47.98	47.91	55.79	55.40	51.63	51.67	49.00	49.47	45.24	46.52
Construction	5.65	5.62	5.95	5.88	5.63	5.56	4.17	4.18	4.01	4.10
Trade, Hotels and Restaurants	8.59	8.30	9.18	8.80	8.91	8.58	10.22	9.88	10.13	9.41
Railways	5.18	5.46	6.44	6.67	6.05	6.28	5.61	5.95	5.17	5.50
Transport by other means	3.65	3.62	4.54	4.61	4.20	4.28	4.33	4.47	4.44	4.66
Storage	0.03	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.03
Communication	1.49	1.68	1.66	1.88	1.48	1.97	1.60	2.29	1.53	2.39
Banking and Insurance	3.18	3.20	4.32	4.13	4.33	4.13	3.94	3.64	3.32	3.45
Real Estate, ownership of dwellings, legal & b. services	6.42	6.24	8.14	7.40	7.46	6.62	6.91	6.05	6.03	5.48
Public Administration	3.95	3.91	4.49	4.55	3.62	3.71	3.33	3.46	2.89	3.06
Other Services	9.84	9.85	11.04	11.44	9.92	10.51	8.86	9.52	7.70	8.44
Sundargarh District	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Planning Commission, Government of India.

The district contributes about eight percent of the Gross State Domestic Product (GSDP) of Odisha, which is more than double of the average district share of 3.33 percent to the GSDP. The share of real NDDP in the real State NSDP was of the order of about seven percent at 2004-05 prices. Table 2.3 analyses contribution of the Sundargarh district to the State GSDP for the period of 2004-05 to 2009-10 both at current prices and in real terms at 2004-05 prices. Table 2.3 also summarises per capita NDDP both at current prices and in real terms at

2004-05 prices for the same period. It may be observed from Table 2.3 that the contribution of the district economy to the State economy varied from 7.63 percent in 2005-06 to 9.07 percent in 2008-09 in terms of real GDDP. Similarly, the share of real NDDP in the State NSDP varied from 6.74 percent in 2005-06 to 7.81 percent in 2008-09. The per capita real NDDP at 2004-05 prices increased from Rs.24,686 in 2005-06 to Rs.36,128 in 2008-09. The real per capita NDDP for Sundargarh district grew at about 11 percent per annum between 2005-06 and 2008-09.

Table 2.3: Contribution of Sundargarh District to the State Economy: 2004-05 to 2009-10

Year	GDDP (Percent)		NDDP (Percent)		Per Capita NDDP (Rs.)	
	At Current Prices	At 2004-05 Prices	At Current Prices	At 2004-05 Prices	At Current Prices	At 2004-05 Prices
2004-05	7.74	7.74	7.05	7.05	25,029	25,029
2005-06	7.65	7.63	6.76	6.74	25,638	24,686
2006-07	8.42	8.28	7.48	7.33	33,480	29,788
2007-08	8.76	8.79	7.66	7.57	42,766	32,974
2008-09	9.19	9.07	8.09	7.81	51,203	36,128
2009-10	8.71	8.72	6.85	6.54	45,622	30,100

Source: Odisha Economic Survey, 2012-13.

Agriculture, animal husbandry, dairy, fisheries and collection of minor forest produce are important sources of livelihoods in the district. Poultry and piggery are also undertaken by the local people, particularly by tribal groups. Household activities also include pottery, basket weaving, rope making, sericulture and stitching of siali and sal leaf plates. Forests also play significant role in the lives of the local people, particularly tribal groups. They depend on forests for their multiple needs and collect kendu leaves, siali leaves, honey, mahua flowers and seeds, edible roots, fruits, seeds, young bamboo shoots and other non-timber forest products. People also collect timber, bamboo and firewood from nearby forests to meet their various needs as well as to sell the same in nearby towns to augment their incomes. As mining and manufacturing dominate the district economy, many people are engaged in these activities.

2.3 Working Population and Work Participation Rates

The population of Sundargarh increased by 56.48 percent between 1981 and 2011, increase being 53.18 percent in male population and 60.01 percent in female population. Total working population of the district has been of the order of 42.71 percent, male working population being 55.10 percent and female working population being 25.89 percent. Male workers have increased from 380,238 (54.89 percent) in 1981 to 584,687 (55.10 percent) in 2011. Female workers have increased from 141,445 (21.93 percent) in 1981 to 288,540 (27.95 percent) in 2011. Total workers have increased from 521,683 (38.99 percent) in 1981 to 873,227 (41.71 percent) in 2011. Of total workers, 79.59 percent were main workers and 20.41 percent marginal workers in 1991. As per 2001 census, main workers got reduced to

64.99 percent and marginal workers increased to 35.01 percent in the district. The proportion of main workers was 33.53 percent and that of marginal workers 8.60 percent in total population in 1991. The proportion of main workers became 26.23 percent and that of marginal workers 14.13 percent in 2001. Table 2.4 compares total population, workers and work participation rates in Sundargarh district from 1981 to 2011. It may be observed from Table 2.4 that

male working population is more than double than that of female working population during the reference period. It is, however, heartening to note whereas the male work participation rate has only marginally increased by 0.38 percentage points from 54.89 percent in 1981 to 55.10 percent in 2011, the increase in the female work participation has been 6.02 percentage points from 21.93 percent in 1981 to 27.95 percent in 2011.

Table 2.4: Population and Workers by Sex in Sundargarh District: 1981 to 2011

Year	Total Population			Total Workers			Work Participation Rate		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
1981	6,92,749	6,45,122	13,37,871	3,80,238	1,41,445	5,21,683	54.9	21.9	39.0
1991	8,12,707	7,60,910	15,73,617	4,31,991	1,88,681	6,20,672	53.2	24.8	39.4
2001	9,35,601	8,95,072	18,30,673	4,80,285	2,58,518	7,38,803	51.3	28.9	40.4
2011	10,61,147	10,32,290	20,93,437	5,84,687	2,88,540	8,73,227	55.1	28.0	41.7

Source: Census of India, 1981, 1991, 2001 and 2011.

Table 2.5 summarises work participation rates by sex and residence in Sundargarh district and Odisha for 2001 and 2011 census periods. It may be observed from Table 2.5 that the work participation rate of male, in both rural and urban, has been higher than those for female in 2001 and 2011. It may also be observed that work participation rates have been higher in rural areas than those in urban areas for both male and female workers in both census periods. Whereas the male work participation rates are similar in both

Sundargarh district and Odisha, the district has reported much higher female work participation rates than the State averages. This may perhaps be due to higher tribal population in the district. As a result, total work participation rates in rural Sundargarh have been higher than those of the State average. Urban Sundargarh has reported less work participation rates than urban Odisha. It may also be noted that work participation rates have generally improved for Sundargarh and Odisha in 2011 as compared to 2001.

Table 2.5: Work Participation Rate by Sex and Residence in Sundargarh and Odisha:2001-11

	2001			2011			Difference (2001-2011)		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Sundargarh									
Male	53.9	46.6	51.3	56.3	53.0	55.1	2.4	6.4	3.8
Female	39.2	8.0	28.9	36.1	12.3	28.0	-3.1	4.3	-0.9
Total	46.6	28.4	40.4	46.2	33.6	41.7	-0.4	5.2	1.3
Odisha									
Male	53.2	49.1	52.5	56.5	54.1	56.1	3.3	5.0	3.6
Female	27.1	10.0	24.7	29.7	14.1	27.2	2.6	4.1	2.5
Total	40.2	30.6	38.8	43.2	34.8	41.8	3.0	4.2	3.0

Source: Census of Odisha, 2001 and 2011

Work participation rates in Sundargarh district have also been analysed by blocks and Urban Local Bodies (ULB) for 1991 and 2001 census periods. Table 2.6 reports work participation rates, proportions of main and marginal workers to total workers and proportions of main and marginal workers to total population for 1991 and 2001 census periods. It may be observed from Table 2.6 that Bargaon block in 1991 and Sundargarh block in 2001 reported highest work participate rates and Lathikata block in 1991 and Rajgangpur block in 2001 had lowest

work participation rates in rural Sundargarh. Similarly, in urban areas, Rourkela ULB in 1991 and Birmitrapur ULB in 2001 reported highest work participation rates and Sundargarh ULB in 1991 and Rajgagpur ULB in 2001 had lowest work participation rates. The analysis given in Table 2.6 further attests the observation rural areas had higher work participation rates than in urban areas. The shares of main and marginal workers with respect to total workers and population have also been summarised in Table 2.6 by blocks and ULB.

Table 2.6: Work Participation Rates by Blocks and ULB in Sundargarh: 1991 and 2001

SL. No	Name of Block / ULB	Work Participation Rate		Main Worker to Total Worker (%)		Marginal Worker to Total Worker (%)		Main Worker to Total Population (%)		Marginal Worker to Total Population (%)	
		1991	2001	1991	2001	1991	2001	1991	2001	1991	2001
Block											
1	Balisankara	47.01	50.31	72.37	53.04	27.63	46.96	34.02	26.68	12.99	23.63
2	Bargaon	49.92	46.73	71.02	57.20	28.98	42.80	35.45	26.73	14.47	20.00
3	Bisra	39.94	35.72	78.34	66.27	21.66	33.73	31.28	23.67	8.65	12.05
4	Bonaigarh	46.05	48.69	73.81	51.39	26.19	48.61	33.99	25.02	12.06	23.67
5	Gurundia	48.59	50.79	78.12	44.66	21.88	55.34	37.95	22.68	10.63	28.11
6	Hemgiri	43.94	54.84	81.33	55.98	18.67	44.02	35.74	30.70	8.20	24.14
7	Koida	42.50	42.18	83.37	68.82	16.63	31.18	35.43	29.03	7.07	13.15
8	Kuanarmunda	40.00	45.24	79.32	51.24	20.68	48.76	31.73	23.18	8.27	22.06
9	Kutra	40.57	43.55	77.27	59.63	22.73	40.37	31.35	25.97	9.22	17.58
10	Lahunipada	48.16	45.84	77.48	51.83	22.52	48.17	37.31	23.76	10.84	22.08
11	Lathikata	38.05	37.71	81.61	69.46	18.39	30.54	31.05	26.19	7.00	11.52
12	Lephipada	48.53	52.87	73.38	54.76	26.62	45.24	35.61	28.95	12.92	23.92
13	Nuagaon	46.13	41.96	73.80	61.27	26.20	38.73	34.04	25.71	12.09	16.25
14	Rajgangpur	41.41	32.71	77.09	66.51	22.91	33.49	31.92	21.75	9.49	10.95
15	Subdega	48.29	48.08	75.97	51.97	24.03	48.03	36.69	24.99	11.60	23.09
16	Sundargarh	46.34	57.63	73.46	58.30	26.54	41.70	34.04	33.59	12.30	24.03
17	Tangarpalli	48.40	50.48	78.15	59.13	21.85	40.87	37.82	29.85	10.58	20.63
	Rural Total	44.88	45.38	76.61	57.77	23.39	42.23	34.38	26.21	10.50	19.16
ULB											
1	Biramitrapur	28.72	29.55	99.26	81.96	0.74	18.04	28.50	24.22	0.21	5.33
2	Rajgangpur	30.51	27.13	96.15	89.55	3.85	10.45	29.33	24.29	1.18	2.84
3	Rourkela	31.01	28.58	99.29	93.26	0.71	6.74	30.79	26.65	0.22	1.93
4	Sundargarh	28.35	28.73	97.75	89.02	2.25	10.98	27.71	25.57	0.64	3.15
	Urban Total	30.28	28.53	98.59	92.05	1.41	7.95	29.85	26.26	0.43	2.27
	Sundargarh District	42.13	40.36	79.59	64.99	20.41	35.01	33.53	26.23	8.60	14.13

Source: Census of India, 1991 and 2001

As per 2001 census, 29.62 percent of total workers were classified as cultivators and 29.76 percent as agriculture labourers. About 2.29 percent of total workers were employed in household industries and the rest 38.33 percent were engaged in other services and activities. Of total main workers, 38.77 percent workers were engaged in agriculture, which is still the mainstay of livelihoods of rural people. Agricultural labourers comprised 17.92 percent, manufacturing sector engaged 15.09 percent workers, 6.10 percent workers were engaged in trade and commerce and 3.79 percent workers were engaged in mining activities and the rest were engaged in other activities.

The number of total employed persons in the district grew at an average rate of 0.018 percent per annum between 2001 and 2011. Based on the basis of average annual growth rate, the number of total employed persons in Sundargarh district has been projected for

each year for the period from 2004-05 to 2009-10 for which GDDP for Sundargarh district are available. The number of total workers, GDDP and real GDDP at 2004-05 prices have been reported in Table 2.7, which also indicates per worker GDDP and per worker real GDDP for Sundargarh district from 2004-05 to 2009-10. It may be observed from Table 2.7 that GDDP for the district grew at an annual average rate of 8.16 percent from 2004-05 and 2009-10, the real GDDP at 2004-05 prices increased only at the rate of 4.08 percent per annum for the same period. Per worker GDDP and real GDDP grew at annual average rates of 7.03 percent and 3.28 percent respectively from 2004-05 to 2009-10. Per worker GDDP varied from Rs.77,197.90 for the year 2004-05 to Rs.167,775.61 for 2009-10. Per worker real GDDP varied from Rs.77,197.90 for the year 2004-05 to Rs.120,685 in 2008-09 and Rs.119,409.21 in 2009-10.

Table 2.7: Per Worker GDDP in Sundargarh District: 2004-05 to 2009-10

Year	Total Workers (Number)	GDDP (Rs. lakh)	Real GDDP (Rs. lakh, at 2004-05 prices)	Per Worker GDDP (Rupees)	Per Worker Real GDDP (Rupees)
2004-05	779,142	601,481	601,481	77,197.90	77,197.90
2005-06	792,588	651,194	627,172	82,160.48	79,129.65
2006-07	806,034	857,603	767,816	106,397.86	95,258.50
2007-08	819,480	1,132,011	904,156	138,137.67	110,332.86
2008-09	832,927	1,364,780	1,005,223	163,853.59	120,685.68
2009-10	846,373	1,420,007	1,010,647	167,775.61	119,409.21
Annual Growth Rates (%)		8.16	4.08	7.03	3.28

Focus Group Discussions were also organised in different villages spread over the district and in all 13,498 households (HH) were covered to ascertain a distribution of main occupations in rural areas. Table 2.8 summarises the results of the Focus Group Discussions by blocks. It may be observed from Table 2.8 that main occupations of households included agriculture (39.5 percent), daily wages (39.5 percent), regular

and temporary service (10.6 percent), business (5.3 percent), trade (0.4 percent), fisheries (0.1 percent), animal husbandry (0.4 percent) and collection of non-timber forest products (0.1 percent). In addition, 1.9 percent households depended on pensions, 0.2 percent on remittances 1.6 percent on traditional profession and 0.3 percent households migrated in search of livelihood options elsewhere.

Table 2.8: Distribution of Main Occupations by Blocks in Sundargarh District

S. No.	Block	Total HH	Agri-culture	Daily Wage	Service	Busi-ness	Trade	Trad. Profsn	Migra-tion	Pen-sion	Fish-ery	A.H.	NTPP	Re-mit
1	Balisankara	1,508	39.7	42.1	7.0	6.3	0.0	1.9	1.1	1.8	0.0	0.0	0.0	0.0
2	Bargaon	516	67.2	18.8	5.4	1.2	0.4	4.1	0.0	1.4	0.0	0.4	0.0	1.2
3	Bisra	374	19.0	50.3	15.8	5.9	2.1	2.1	0.3	4.3	0.0	0.3	0.0	0.0
4	Bonaigarh	581	36.7	41.5	10.5	2.6	0.0	1.2	0.2	6.0	0.0	0.0	0.0	0.0
5	Gurundia	308	51.9	37.0	8.7	1.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
6	Hemgiri	1,265	30.7	50.8	6.7	6.1	0.4	1.5	0.2	3.6	0.0	0.0	0.0	0.0
7	Koida	967	1.7	58.3	16.5	21.5	0.6	0.2	0.0	0.5	0.0	0.6	0.0	0.0
8	Kuanarmunda	875	33.7	37.6	11.9	2.3	0.2	4.7	0.0	5.9	0.0	1.7	0.0	1.9
9	Kutra	1,142	53.9	23.4	16.7	3.9	0.0	0.9	0.1	1.1	0.0	0.0	0.0	0.0
10	Lahupada	841	68.3	21.4	6.5	1.2	0.0	1.7	0.0	1.1	0.0	0.0	0.0	0.0
11	Lathikata	966	22.6	64.8	4.2	3.3	0.2	0.8	0.3	0.3	0.2	2.2	1.0	0.0
12	Lephrpada	928	41.1	33.7	14.5	5.4	2.8	0.5	1.1	0.8	0.0	0.1	0.0	0.0
13	Nuagaon	518	66.4	15.1	9.3	4.6	0.0	0.2	0.0	1.7	0.4	2.3	0.0	0.0
14	Rajgangpur	801	48.2	27.5	14.0	4.2	0.0	5.0	0.0	0.7	0.0	0.0	0.2	0.1
15	Subdega	627	38.1	45.1	9.3	5.3	0.0	1.1	0.6	0.5	0.0	0.0	0.0	0.0
16	Sundargarh	881	34.3	50.6	9.2	4.1	0.5	0.6	0.6	0.2	0.0	0.0	0.0	0.0
17	Tangarpalli	400	46.3	27.0	18.8	2.5	0.0	0.8	0.0	3.5	1.3	0.0	0.0	0.0
	District	13,498	39.5	39.5	10.6	5.3	0.4	1.6	0.3	1.9	0.1	0.4	0.1	0.2

Source: Primary Survey 2011.

Note: Service includes regular and temporary service, Trad. Profsn means traditional professions, A.H. means Animal husbandry, NTPP means Non-timber forest products, remit means remittances.

2.4 Incidence of Poverty

Poverty is measured in India in two ways. One measured is based on large National Sample Surveys (NSS) for consumption expenditure, which are generally undertaken every five years. On the basis of periodical NSS data, Planning Commission estimates poverty. Such measures are valid only at the State level. Odisha, however, also estimates poverty at the level of NSS regions. Such

measures are generally not undertaken at the district level because of inadequate sample sizes. Sundargarh district is part of northern NSS region. If the poverty estimates for the northern NSS region are taken as a proxy for Sundargarh district, poverty estimates for rural areas of the district may be as indicated in Table 2.9 and are as per Tendulkar Committee methodology.

Table 2.9: Poverty Estimates for Northern NSS Region and Rural Odisha: 2004-05 to 2011-12

Year	Northern NSS Region (proxy for Sundargarh, HCR percent)	Rural Odisha (HCR percent)
2004-05	70.50	60.80
2009-10	41.70	39.20
2011-12	39.97	35.69

Source: Odisha Economic Survey, 2013-14

It may be observed from Table 2.9 that rural poverty has got reduced by 30.53 percentage points from 70.50 percent in 2004-05 to 39.97 percent in 2011-12 in the northern region as against only 25.11 percentage points for rural Odisha for the same period. Though the incidence of poverty in the northern NSS region is higher than the coastal NSS region, the reduction of rural poverty in this region has been sharper than the coastal NSS region. Scheduled Tribes (ST) and Scheduled Castes (SC) generally face higher incidence of poverty than other communities. However, the reduction of poverty for ST and SC groups has been significant during the last one decade.

The second method for identification of households Below Poverty Line (BPL) has been prescribed by the Ministry of Rural Development, Government of India from time to time. This method is based on periodical census of all households in rural Odisha. The BPL households are identified on the basis of pre-determined criteria. Following this methodology, the State

Panchayati Raj Department has conducted three BPL censuses in 1992, 1997 and 2002 to identify the rural BPL households. However, BPL households have not yet been notified on the basis of the BPL census of 2002. Therefore, poverty estimates are available only for 1992 and 1997 for all Blocks of the State. The Status BPL households in Sundargarh district for 1992 and 1997 has been summarised in Table 2.10.

As per the second methodology for poverty estimation, the incidence of poverty has come down by 9.05 percentage points from 74.27 percent in 1992 to 65.22 percent in 1997 (Table 2.10). It may also be observed from Table 2.10 that Lahunipada block recorded highest estimates of poverty (99.13 percent BPL HH) followed by Gurundia block (88.68 percent BPL HH) and Bisra block (44.18 percent) recorded lowest poverty estimates followed by Subdega block (48.73 percent) in 1997. Hemgiri, Bisra and Kutra blocks reported higher poverty reduction between 1992 and 1997.

Table 2.10: The Status of Rural BPL Households by Blocks in Sundargarh: 1992 and 1997

S. No.	Name of Block	Rural BPL Survey 1992			Rural BPL Survey 1997			Difference in BPL from 1992-1997
		Total Households (Number)	Total BPL Households (Number)	Total BPL Households (Percent)	Total Households (Number)	BPL Households (Number)	BPL Households (Percent)	
1	Ballisankara	14,160	10,391	73.38	17,739	11,275	63.56	-9.82
2	Bargaon	11,468	9,440	82.32	14,368	11,452	79.70	-2.62
3	Bisra	10,024	7,545	75.27	13,224	5,843	44.18	-31.09
4	Bonei	11,076	8,549	77.18	15,359	9,229	60.09	-17.09
5	Gurundia	10,111	8,564	84.7	13,760	12,202	88.68	3.98
6	Hemgiri	14,527	11,740	80.82	17,702	8,649	48.86	-31.96
7	Koida	14,207	7,699	54.19	17,364	11,106	63.96	9.77
8	Kuarmunda	13,546	11,552	85.28	20,483	14,689	71.71	-13.57
9	Kutra	11,936	10,115	84.74	15,732	8,893	56.53	-28.21
10	Lahunipada	15,457	12,959	83.84	14,781	14,653	99.13	15.29
11	Lathikata	22,408	13,120	58.55	25,231	14,077	55.79	-2.76
12	Lephipara	14,159	11,050	78.04	15,671	9,748	62.20	-15.84
13	Nuagaon	15,181	11,010	72.52	21,440	17,244	80.43	7.91
14	Rajgangpur	12,013	8,153	67.87	16,884	11,944	70.74	2.87
15	Subdega	11,429	7,695	67.33	13,742	6,696	48.73	-18.6
16	Sundargarh	12,560	9,264	73.76	15,837	8,675	54.78	-18.98
17	Tangarpalli	11,434	8,776	76.75	15,824	9,594	60.63	-16.12
	Total	225,696	167,622	74.27	285,141	185,969	65.22	-9.05

Source: BPL Survey, 1992 and 1997, Government of Odisha

2.5 Distribution of Incomes and Assets by Blocks in Sundargarh District

The latest BPL census (2002) distributes rural households based on their monthly incomes. Table 2.11 analyses distribution of incomes of rural HH by blocks in Sundargarh district based on 2002 BPL census. It may be observed that 32.42 percent rural HH reported monthly incomes less than Rs.250; 37.91 percent rural HH had monthly incomes in the range of Rs.250-499; 17.98 percent HH

in the range of Rs.500-1,499; 3.53 percent HH in the range of Rs.1,500- 2,500 and 7.55 percent rural HH had monthly incomes above Rs.2500. About 0.61 percent HH did not respond. There are wide variations and income inequalities in income distribution across different income classes. Average annual household incomes in Sundargarh district have been depicted in Chart 2.2.

Table 2.11: Distribution of Incomes of Rural Households by Blocks in Sundargarh District: 2002

SL. No.	Name of Block	Rural HH (Number)	Monthly Income Levels (Rupees)					No Response
			Less than 250	250-499	500-1499	1500-2500	More than 2500	
1	Balisankar	21,583	45.91	37.10	7.88	1.85	4.29	2.97
2	Bargaon	16,276	23.02	42.15	24.64	3.39	6.73	0.07
3	Birsa	18,550	8.65	30.17	33.52	6.87	20.17	0.61
4	Bonaigarh	15,728	38.42	36.98	9.75	4.45	10.22	0.17
5	Gurundia	14,356	38.10	43.01	14.14	1.97	1.82	0.96
6	Hemagir	20,137	28.98	45.18	17.26	2.62	4.78	1.18
7	Koida	17,600	16.78	30.64	38.13	5.10	9.35	0.00
8	Kuarmunda	22,474	25.42	44.75	19.31	3.90	5.98	0.64
9	Kutra	18,017	53.25	33.05	6.52	2.28	4.58	0.32
10	Lahunipara	21,609	31.43	45.62	13.25	2.29	6.80	0.60
11	Lepripara	19,102	40.12	44.31	6.51	1.93	6.88	0.25
12	Lethikata	27,915	20.92	30.99	26.44	7.50	13.67	0.49
13	Nuagaon	23,654	40.07	38.86	14.97	1.81	4.22	0.07
14	Rajgangpur	20,533	15.13	36.55	37.27	5.05	5.88	0.12
15	Subdega	16,403	43.84	34.13	12.97	2.19	5.99	0.88
16	Sundargarh	18,409	54.70	29.06	6.50	2.61	6.70	0.43
17	Tangarpali	16,651	33.89	42.84	11.82	2.64	8.51	0.29
Total		328,997	32.42	37.91	17.98	3.53	7.55	0.61

Source: BPL Survey, 2002

Distribution of Household Assets

Though Indian Census records various assets owned by residents during the census operations. However, the results of 2011 census as regards household assets did not become available by 2011. Therefore, a primary field survey was conducted during 2011 to ascertain main durable assets held by rural households. For this purpose, 1,558 rural HH were randomly selected across all blocks in the district and their durable assets were ascertained. The results of this survey

are summarised in Table 2.12. It may be observed that 78.3 percent rural HH had bicycles, 47.0 percent HH owned mobiles, 20.2 percent had colour televisions, 5.8 percent had black and white televisions, 13.0 percent owned bikes, 7.3 percent had refrigerators and 0.7 percent owned land phone. About 1.5 percent rural households owned tractors. It is also interesting to note that televisions and mobiles were owned even by many BPL households.

Table 2.12: Possession of Durable Assets by Rural Households in Sundargarh District

SL. No.	Name of Block	Television		Refrigerator	By-Cycle	Bike	Mobile	Land phone	Tractor	Households (Number)
		Colour	B & W							
1	Balisankar	17.5	5.2	1.0	94.8	15.5	49.5	1.0	2.1	97
2	Badagaon	12.8	1.3	1.3	82.1	9.0	30.8	0.0	2.6	78
3	Bishra	39.6	8.8	7.7	89.0	16.5	60.4	1.1	3.3	91
4	Baneigarh	17.9	9.0	9.0	73.1	10.3	35.9	1.3	2.6	78
5	Gurundia	15.2	4.5	7.6	63.6	7.6	42.4	0.0	1.5	66
6	Hemagiri	20.0	4.8	6.7	79.0	8.6	34.3	1.9	0.0	105
7	Koira	26.7	7.0	5.8	50.0	8.1	54.7	0.0	0.0	86
8	Kuarmunda	35.0	7.0	11.0	71.0	19.0	58.0	0.0	0.0	100
9	Kutra	30.5	8.5	12.2	87.8	14.6	65.9	0.0	2.4	82
10	Lahunipada	9.5	2.9	4.8	70.5	5.7	29.5	2.9	1.0	105
11	Lathikata	6.4	0.0	0.7	83.0	3.5	31.9	0.0	0.7	141
12	Lephripada	22.6	9.7	12.9	82.8	22.6	51.6	0.0	3.2	93
13	Nuagaon	17.8	6.9	10.9	67.3	16.8	45.5	0.0	2.0	101
14	Rajgangpur	11.1	3.0	5.1	79.8	7.1	44.4	1.0	1.0	99
15	Sabdega	25.0	2.8	8.3	84.7	26.4	58.3	0.0	2.8	72
16	Sundargarh	26.2	10.7	15.5	85.7	21.4	65.5	1.2	2.4	84
17	Tangarpali	18.8	10.0	8.8	83.8	16.3	53.8	1.3	0.0	80
	Total	20.2	5.8	7.3	78.3	13.0	47.0	0.7	1.5	1,558

Source: Primary Field Survey, 2011

Out of total 1,558 rural households, 99.61 percent used steel utensils, 95.25 percent used aluminium utensils and 55.32 percent used utensils made of Brass. Use of brass utensils, which was very common in the past, has got reduced over time. More and more households prefer the use of steel and aluminium utensils. Table 2.13 summarises the results of the primary field survey as

regards the use of utensils of different metals. Households have been divided into four categories for this purpose: those using up to 25 percent of total utensils, 25-50 percent of total utensils, 51-75 percent of total utensils and more than 75 percent to total utensils of a particular metal, e.g., brass, steel or aluminium.

Table 2.13: Households using Utensils of Different Metal in Sundargarh District

Type of Utensils	Less than 25 Percent	25 to 50 Percent	51 to 75 Percent	0 75 Percent and above	Total Households (percent)
Brass	78.89	18.45	2.09	0.58	862 (55.32)
Steel	2.84	31.44	55.28	10.44	1,552 (99.61)
Aluminium	24.39	55.26	17.25	3.10	1,484 (95.25)

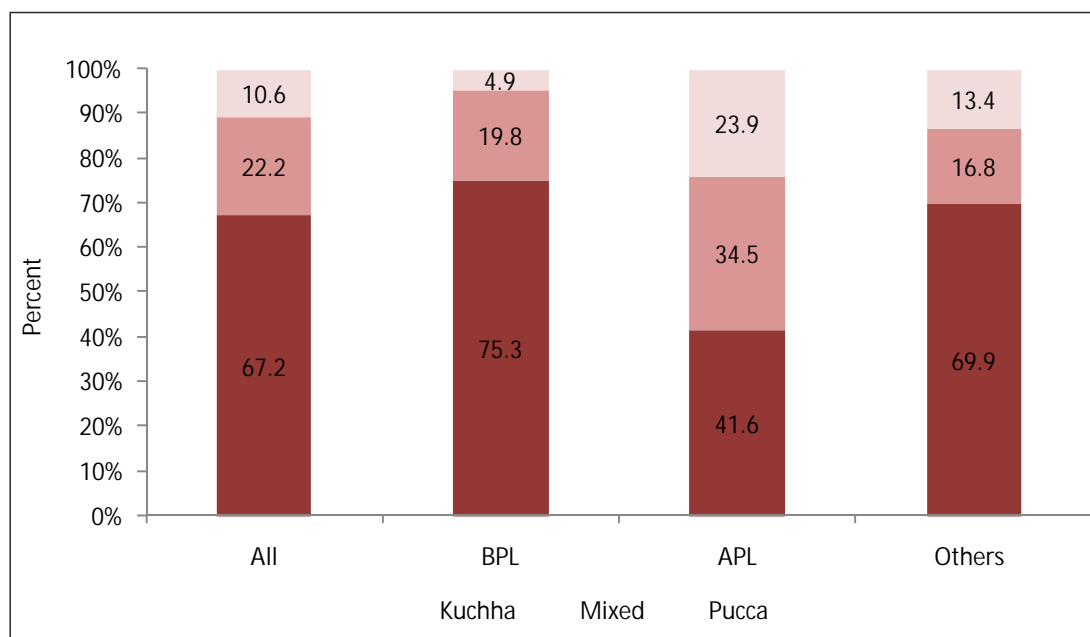
Source: Primary Field Survey, 2011

Distribution of Housing Assets in the District

Housing is widely perceived as one of the basic human need, considered essential for comfortable living. Therefore, the primary field survey, 2011 also ascertained the distribution of housing assets in Sundargarh district. The results of the survey indicated that 67.2 percent houses were *Kuchha* houses², 10.6 percent houses were *pucca* houses³ and

22.2 percent were of mixed type, that is, part *Kuchha* and part *pucca*. *Kuchha* houses are more prevalent in rural areas than in urban areas. Rural housing schemes have significantly contributed to *pucca* houses in rural areas. Chart 2.2 shows the distribution of houses by type in Sundargarh district.

Chart 2.2: Percentage Distribution Type of House by Household Categories in Sundargarh District



Source: Primary Field Survey, 2011

Table 2.14: Distribution of Type of Houses by Household Categories in Sundargarh District

Type of House	Households categories			No. of Households
	BPL	APL	Others	
Kuchha	65.7	12.8	21.5	1,047
Mixed	52.3	32.1	15.6	346
Pucca	27.3	46.7	26.1	165
Sundargarh District	58.7	20.7	20.6	1,558

Source: Primary Field Survey, 2011

² *Kuchha* houses are generally made of mud or raw bricks and have often thatched or tiled roofs.

³ *Pucca* houses are made of burnt bricks or stone and cement concrete. Such houses are more durable than *kuchha* houses and need less frequent repairs than *kuchha* houses.

Of 1,558 rural households that were surveyed 914 HH were BPL, 322 HH were APL and 322 were of other category. Of houses of 914 BPL HH, 75.3 percent were kuchha, 4.9 percent pucca and 19.8 percent were of mixed type. In the APL category, 41.6 percent houses were kuchha, 23.9 percent pucca and 34.5 percent mixed type and of the other category, 69.9 percent were kuchha, 13.4 percent pucca and 16.8 percent mixed type. In all, 1,047 rural HH had kuchha houses, 165 HH had pucca houses and 346 HH had mixed type houses. Table 2.14 summarises the outcomes of the primary field survey as regards the distribution and types of housing assets.

The survey has ascertained that 20.5 percent rural households live in single room houses, 48.7 percent rural HH in double room houses

and 30.9 percent in more than two room houses. Many houses (about 50.4 percent) also have cattle sheds attached or adjacent to their houses. Availability of own drinking water source is only in 11.0 percent houses and the rest households depend on community water sources. About 90.2 percent households own their housing sites and have constructed houses on their own land. There are, however, 9.8 percent rural households, mostly of BPL category, which do not own any housing site. Therefore, with a view to meeting this basic human need, Government have implemented several housing schemes including the ones that provide homestead land to the needy landless households, particularly BPL households of ST and SC categories.



Rural Housing Schemes

Indira Awas Yojana (IAY)

The scheme is a centrally sponsored and aims at providing grants for construction of houses to rural Below Poverty Line (BPL) households, prioritising those who belong to the ST and SC communities or are disabled,

freed bonded labourers, minorities, or families of military personnel killed in action. The targeted households were given grants of Rs.35, 000 per unit, which has been revised recently to Rs.45,000 in plain areas and Rs.48,500 in hilly/difficult areas.

Table 2.15: Distribution of IAY Beneficiaries by Blocks and Social Groups in Sundargarh Dist.

SL No	Name of Block	2010-11					2011-12					2012-13				
		ST	SC	Minorities	Others	Total	ST	SC	Minorities	Others	Total	ST	SC	Minorities	Others	Total
1	Balisankara	5	0	1	2	7	91	33	4	74	198	140	21	10	108	269
2	Bargaon	16	3	0	7	26	43	4	1	20	67	125	18	2	61	204
3	Bisra	0	0	0	0	0	117	22	11	62	201	138	7	0	80	225
4	Bonaigarh	1	0	0	1	2	100	26	3	58	184	101	35	4	80	216
5	Gurundia	0	0	0	0	0	135	6	0	37	178	125	10	9	36	171
6	Hemgiri	0	0	0	0	0	0	0	0	0	0	112	90	3	77	279
7	Koida	9	0	2	4	13	46	5	8	21	72	161	7	31	41	209
8	Kuarmunda	89	5	0	6	100	189	36	0	57	282	194	35	1	82	311
9	Kutra	12	0	0	7	19	4	0	0	0	4	139	27	2	27	193
10	Lahunipada	0	0	0	0	0	0	0	0	0	0	132	15	0	81	228
11	Lathikata	1	0	0	2	3	219	29	10	67	315	269	13	16	50	332
12	Lephipada	0	0	0	0	0	1	0	0	0	1	139	26	1	90	255
13	Nuagaon	0	0	0	0	0	0	0	0	0	0	104	47	2	60	211
14	Rajgangpur	3	0	0	1	4	0	0	0	0	0	230	26	3	30	286
15	Subdega	0	0	0	0	0	5	0	1	4	9	129	32	1	66	227
16	Sundargarh	0	0	0	0	0	1	0	0	1	2	137	23	0	95	255
17	Tangarpali	0	0	0	0	0	0	0	0	5	5	110	35	1	77	222
	Total	136	8	3	30	174	951	161	38	406	1518	2485	467	86	1,141	4,093

Source: DRDA, Sundargarh

Table 2.15 summarises the coverage of rural BPL beneficiaries under IAY by blocks and by social classes such as ST, SC, minorities and others for the years 2010-11, 2011-12 and 2012-13. It may be observed that ST BPL households have dominated the list of beneficiaries in the district. In 2010-11, 78.16 percent IAY houses were allocated to ST beneficiaries; in 2011-12, 62.65 percent ST beneficiaries and in 2012-13, 61.46 percent ST beneficiaries. There are two reasons why ST beneficiaries dominate the list of IAY beneficiaries. First, ST communities dominate the population of the district. Second, ST communities face highest incidence of poverty among all communities.

Mo Kudia

This is the scheme, which has been launched by the State Government and caters to unmet needs of those, who are in need of shelter, but not covered under the centrally sponsored scheme: IAY. The scheme also covers the poor affected by floods and fire, naxal violence and elephant menace. The scheme specially targets Particularly Vulnerable Tribal Groups (PVTG). Under this scheme, the State Government provides grants of Rs.45,000 to targeted beneficiaries

in plain areas and Rs.48,000 to targeted beneficiaries in hilly/difficulty areas.

Vasundhara

The scheme aims at providing government land up to 4 decimal to those households that have no homestead land to construct a house. The extent of homestead land to targeted beneficiaries has been recently revised. Under the revised norms, Government provides 10 decimals of homestead land to eligible homestead-less households, subject to availability of land.

2.6 Major Livelihoods Sectors

Major livelihoods sectors include agriculture, horticulture, animal husbandry, fisheries, forests, mining, industries and other enterprises. Salient aspects of these livelihood sectors are discussed below. Efforts made by the State Government to promote different sectors and thus to strengthen livelihoods of the people have also been summarised. It may be observed that most of these livelihood sectors are land-based. It may, therefore, be useful to begin with the major land-use patterns in Sundargarh district. Table 2.16 summarises major land-use patterns in the district for the years 1998-99 and 2008-09.

Table 2.16: Major Land-use Patterns by Blocks in Sundargarh District (Area in sq.km.)

SL No.	Name of Block /ULB	Geographical Area	Forest Area		Misc. Trees, Groves not included in Net Area Sown Waste	Permanent Pastures & Other Grazing Lands		Cultivable		Non-Agricultural Use		Current fallow		Old fallows		Net Area Sown		
			1998-99	2008-09		1998-99	2008-09	1998-99	2008-09	1998-99	2008-09	1998-99	2008-09	1998-99	2008-09	1998-99	2008-09	
Block																		
1	Balisankara	443.39	79.9	71.7	1.0	0.1	24.2	24.8	56.4	72.4	29.4	31.7	10.2	22.4	46.9	39.6	175.0	160.4
2	Bangaon	354.16	120.6	116.5	3.6	0.8	14.5	18.5	10.0	9.8	16.4	20.4	45.4	28.1	25.2	14.2	113.2	136.5
3	Bisra	175.84	18.2	15.3	0.2	0.6	9.9	8.4	2.2	1.4	17.8	28.7	14.1	10.0	8.1	13.6	95.9	89.5
4	Bonaigarh	338.58	147.1	87.1	0.5	0.8	10.3	16.0	11.2	19.0	16.2	17.9	29.1	24.0	6.3	11.7	99.4	123.8
5	Gurundia	588.21	215.5	210.2	0.2	1.3	18.4	22.2	52.0	39.4	19.5	30.1	36.0	34.6	25.5	57.6	133.3	105.7
6	Hemgiri	548.36	275.6	241.6	3.9	1.2	23.0	39.9	21.4	17.3	27.1	39.4	35.6	39.1	35.3	44.9	95.1	124.4
7	Kolda	649.12	192.2	174.7	0.6	1.6	15.4	13.2	57.6	33.3	20.1	23.9	52.3	55.9	29.3	49.9	72.9	43.1
8	Kuarmunda	507.72	93.6	67.2	0.7	0.7	20.4	18.0	46.7	35.4	60.1	66.0	27.4	56.5	28.3	23.2	214.9	212.3
9	Kutra	316.15	14.3	10.2	1.6	0.2	21.0	18.3	15.3	14.9	24.1	26.3	39.4	52.8	10.3	7.0	181.4	179.3
10	Lahunipada	701.38	111.2	98.6	0.4	0.8	27.2	21.2	28.1	28.7	24.4	35.1	31.4	43.6	16.6	44.8	139.2	139.3
11	Lathikata	307.45	71.4	60.4	0.5	0.4	14.7	14.9	6.4	16.3	34.1	62.1	43.0	21.0	35.2	17.6	111.2	125.2
12	Lephrpada	409.36	104.5	133.9	3.4	1.1	16.0	17.9	18.3	20.6	23.3	21.3	42.6	41.7	27.9	23.5	151.9	124.6
13	Nuagaon	392.41	29.6	26.8	0.5	1.0	19.0	13.0	15.5	13.9	30.9	45.8	33.0	53.8	33.7	50.5	214.8	174.2
14	Rajgangpur	380.85	64.8	84.9	0.5	0.1	9.4	17.9	22.0	23.0	44.2	30.9	36.9	8.6	40.2	57.7	154.7	147.7
15	Subdega	351.16	69.0	54.6	2.2	0.8	14.6	12.7	28.2	30.2	27.9	25.7	22.7	18.6	28.9	20.4	144.7	152.9
16	Sundargarh	359.32	79.1	84.0	6.8	5.6	19.1	17.2	12.2	46.9	33.7	31.4	41.3	16.2	20.6	13.9	143.7	133.8
17	Tangarpalli	254.82	26.2	47.2	6.6	0.6	14.8	12.7	10.0	7.5	33.8	22.4	16.8	38.2	37.6	14.0	107.5	111.1
ULB																		
1	Biramitrapur	21.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Rajgangpur	26.16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	Rourkela	157.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Sundargarh	23.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total ULB	229.00	-	6.3	-	0.3	-	2.8	-	6.6	-	99.1	-	8.6	-	30.9	-	25.8
	Sundargarh District	9,712.00	1,712.8	1,591.2	33.2	18.2	292.0	309.6	413.5	436.6	480.0	658.2	557.2	573.7	455.0	535.0	2,348.8	2,309.6

Source: Directorate of Economics and Statistics, Odisha

2.6.1 Agriculture

Agriculture and allied sector is the mainstay of the people's livelihoods, despite the fact that manufacturing and mining dominate the district economy. To facilitate agricultural promotion, five agricultural districts including Sundargarh, Panposh, Banai, Lephripada and Rajgangpur function in the district. The climate is generally hot and moist sub humid and main soil groups are mixed red and yellow soil types. Out of total 313,000 ha cultivated land, 52 percent is

upland, 30 percent medium land and 18 percent low land. Paddy still is the main crop covering 72 percent of cultivable land in Kharif season. Due to limited irrigation facilities, about 20 percent land is irrigated during Kharif and 8 percent irrigated in Rabi season. Normal rainfall is about 1,422.4 mm. Rainfall sometimes is erratic and has uneven distribution in the district. Key agricultural indicators of Sundargarh district are summarised in Table 2.17.

Table 2.17: Agricultural Indicators of Sundargarh District

Indicators	Value	Indicators	Value
DAO circles (No)	5	Average Annual Rain fall (mm)	1,422
AAO circles (No)	34	Govt. Agri. farms for seed multiplication	4
Seed Sale centres (No)	17	Large Size Farms (No)	1
Addl. Sale Centres (No)	17	Small Size Farms (No)	3
AO/ VAW/LVAW circles (No)	322	Seed processing Plants (No)	3
Geographical Area (ha)	971,200	Farm Families (No)	178,487
Total Cultivated area (ha)	313,000	Marginal Farmers (No)	76,361
High Lands (ha)	163,000	Small Farmers (No)	61,173
Medium Lands (ha)	95,000	Big Farmers (No)	40,953
Low Lands (ha)	55,000	Medium Irrigation projects (No)	4
Total Paddy Lands (ha)	226,000	Minor Irrigation Projects (No)	83
High Land Paddy (ha)	76,000	Lift Irrigation Projects (LIP) (No)	437
Medium Land Paddy (ha)	95,000	Private Lift Irrigation Projects (No)	552
Low Land Paddy (ha)	55,000	Dug wells (No)	18,024
Total Non-paddy Area (ha)	87,000	Lift Irrigation Points (commercial) (No)	357

Source: Deputy Director, Agriculture, Sundargarh, 2011-12;

Notes: No. - number, ha - hectare, mm - millimetres.

Operational Holding Patterns

As per Odisha Agriculture Statistics, 2010-11, there are total 212,525 farm households, i.e., 64.59 percent of the total 328,997 households of the district⁴. They all own 281,311 ha of agriculture land in the district. Out of total farm households, 52.44 percent are marginal farmers and hold only 23.68 percent of agricultural land with an average operational

holding of 0.59 ha. Small farmers, being 30.93 percent of total farm households, who own 33.45 percent agriculture land with average operational holding of 1.43 ha. Additional 13.36 percent semi-medium farm households own total 27.13 percent agriculture land with average operational holding of 2.68 ha. About 3.02 percent are

⁴Census 2001



medium farm households, which own 12.51 percent agriculture land with average operational holding of 5.47 ha. The proportion of large farm households is only 0.25 percent, but they own 3.12 percent agriculture land with average operational holding of 17.33 ha. There is thus gross inequality in distribution of operational

holdings among farm households. Overall, average operational holding of farm households is only 1.32 ha in the district. It may be observed that agriculture still forms the mainstay of livelihoods in the district. Table 2.18 analyses operational holding patterns in Sundargarh district.

Table 2.18: Distribution of Operational Holdings in Sundargarh District: 2010-11

Operational Holdings by Categories	Total Operational Holdings (Number)	Distribution of Operational Holdings (percent)	Total Area of Operational Holdings (ha)	Distribution of Area of Operational Holdings (percent)	Average Holding Size (ha)
Marginal (<1 ha)	111,447	52.44	66,627	23.68	0.59
Small (1-2 ha)	65,737	30.93	94,096	33.45	1.43
Semi-medium (2-4 ha)	28,392	13.36	76,311	27.13	2.68
Medium (4-10 ha)	6,425	3.02	35,192	12.51	5.47
Large (>10 ha)	524	0.25	9,085	3.23	17.33
All Categories	212,525	100.00	281,311	100.00	1.32

Source: Odisha Agriculture Statistics 2010-11; Agricultural Census 2005-06

Table 2.19: Distribution of Farm Households by Blocks in Sundargarh District

SL. No.	Name of Block	Farm Households (Number)				Total	Farm Households (Percent)			Total Households*	Farm House-holds (Percent)
		Marginal Farmers	Small Farmers	Other Farmers	Total		Marginal Farmers	Small Farmers	Other Farmers		
1	Balisankara	4,471	3,294	3,198	10,963	40.78	30.05	29.17	21,583	50.79	
2	Bargaon	4,478	2,342	911	7,731	57.92	30.29	11.78	16,276	47.50	
3	Bisra	1,342	3,333	536	5,211	25.75	63.96	10.29	18,550	28.09	
4	Bonaigarh	5,223	471	112	5,806	89.96	8.11	1.93	15,728	36.92	
5	Gurundia	3,964	3,660	81	7,705	51.45	47.50	1.05	14,356	53.67	
6	Hemgiri	1,307	1,920	5,056	8,283	15.78	23.18	61.04	20,137	41.13	
7	Koinda	3,418	2,240	649	6,307	54.19	35.52	10.29	17,600	35.84	
8	Kuarmunda	4,379	4,982	3,328	12,689	34.51	39.26	26.23	22,474	56.46	
9	Kutra	2,645	3,320	2,671	8,636	30.63	38.44	30.93	18,017	47.93	
10	Lahumipada	4,986	4,948	500	10,434	47.79	47.42	4.79	21,609	48.29	
11	Lathikata	4,423	2,148	2,689	9,260	47.76	23.20	29.04	19,102	48.48	
12	Lephripada	3,242	2,216	2,893	8,351	38.82	26.54	34.64	27,915	29.92	
13	Nuagaon	4,822	4,460	2,773	12,055	40.00	37.00	23.00	23,654	50.96	
14	Rajgangpur	3,714	4,693	569	8,976	41.38	52.28	6.34	20,533	43.71	
15	Subdega	1,944	1,456	3,696	7,096	27.40	20.52	52.09	16,403	43.26	
16	Sundargarh	3,600	3,540	1,032	8,172	44.05	43.32	12.63	18,409	44.39	
17	Tangarpalli	4,859	1,315	1,890	8,064	60.26	16.31	23.44	16,651	48.43	

Source: Deputy Director of Agriculture, Sundargarh, 2007 survey. Note: * Total families as per census 2001

Distribution of farm households has also been analysed by blocks in Table 2.19. It may be noted that Kuarmunda blocks reports highest proportion of farm households (56.46 percent of total Block households) with 34.51 percent marginal farmers, 39.26 percent small farmers and 26.23 percent large and other farmers. Other blocks which have more than 50 percent farm households include Gurundia (53.67 percent), Nuagaon (50.96 percent) and Balisankara (50.79 percent) block. The lowest percentage of farmers has been reported in Bisra (28.09 percent) and Lephripada (29.92 percent) blocks. There are thus wide variations and acute inequalities across blocks as regards distribution of operational holdings. It has been observed that even 72.8 percent BPL households also own some land holding,

which may or may not be adequate for their sustenance. Share cropping has been in practice in the district. Of the total available agriculture land, up-land is the major land type (40.8 percent) followed by medium (34.6 percent) and low land (24.6 percent).

Net Sown Area, Crop Area, Production and Productivity of Major Crops

Out of 281,311 ha agriculture land, net area sown was 234,885 ha in 1998-99 and 228,355 ha in 2008-09. Table 2.20 compares distribution of net area sown by blocks in Sundargarh district in 1998-99 and 2008-09. Kuarmunda block reported highest sown net area both in 1998-99 (21,489 ha) and 2008-09 (21,233 ha). Nuagaon block also reported higher net area sown in 1998-99 (21,478 ha) and Kutra block and Nuagaon block also

Table 2.20: Comparison of Net Area Sown by Blocks in Sundargarh District: 1998-99 & 2008-09

S. No.	Name of Block	Net Area Sown (ha), 1998-99	Net Area Sown (ha), 2008-09	Growth Rate (Percent)
1	Balisankara	17,502	16,040	-8.35
2	Bargaon	11,318	13,652	20.62
3	Bisra	9,587	8,953	-6.61
4	Bonaigarh	9,943	12,375	24.46
5	Gurundia	13,333	10,565	-20.76
6	Hemgiri	9,510	12,441	30.82
7	Koida	7,297	4,308	-40.96
8	Kuarmunda	21,489	21,233	-1.19
9	Kutra	18,141	17,927	-1.18
10	Lahunipada	13,924	13,925	0.01
11	Lathikata	11,116	12,519	12.62
12	Lephripada	15,188	12,455	-17.99
13	Nuagaon	21,478	17,423	-18.88
14	Rajgangpur	15,469	14,767	-4.54
15	Subdega	14,466	15,288	5.68
16	Sundargarh	14,371	13,377	-6.92
17	Tangarpalli	10,753	11,107	3.29
	Total	234,885	228,355	-2.78

Source: District Agriculture Office, Sundargarh, 2011

reported higher net area sown in 2008-09 (17,927 ha and 17,423 ha respectively). It may also be noted that net sown area has been varying from year to year depending upon weather, availability of irrigation facilities and other conditions. However, there has been some increase in net sown area in recent years. As per Agriculture Statistics, 2010-11, the net sown area was reported 289,000 ha in 2010-11 against 281,000 ha in 2009-10.

The cropping intensity of the district has shown progressive improvements from 125 percent in 2007-08 to 135 percent in 2010-11. There was, however, a reduction in cropping intensity to 130 percent in 2011-12. This is, however, much less than average cropping intensity of Odisha, which varied from 158 percent in 2007-08 to 166 percent in 2011-12. Table 2.21 compares cropping intensity of Sundargarh with that of Odisha from 2007-08 to 2011-12.

Table 2.21: Cropping Intensity in Sundargarh District

(in Percent)

Year	Sundargarh		Odisha	
	Cropping Intensity	Cropping Intensity Growth	Cropping Intensity	Cropping Intensity Growth
2007-08	125	-	158	-
2008-09	129	3.20	162	2.53
2009-10	133	3.10	163	0.62
2010-11	135	1.50	167	2.45
2011-12	130	-3.70	166	-0.60

Source: Odisha Agricultural Statistics of Different Years, Dept. of Agriculture, Govt. of Odisha.

Table 2.22: Productivity, Area, Production & Productivity of Major Crops in Sundargarh: 2007-08 & 2008-09

Type of Crops	2007-08			2008-09		
	Area (ha)	Production (quintals)	Productivity (quintal/ha)	Area (ha)	Production (quintals)	Productivity (quintal/ha)
Paddy	216,374	4,554,589	21.05	218,438	4,485,955	20.54
Wheat	1,737	32,934	18.96	1,448	26,180	18.08
Pulses	7,959	26,201	3.29	6,886	22,458	3.26
Oilseeds	4,867	25,854	5.31	4,296	21,829	5.08
Potatoes	686	49,385	71.99	579	47,571	82.16
Sugarcane	167	107,682	644.80	13	7,337	564.40

Source: District Statistical Handbook, 2009, Sundargarh; Directorate of Economics & Statistics, Odisha.

Table 2.23: Area, Production & Productivity of Paddy by Blocks in Sundargarh District: 1998-99 & 2008-09

S. No.	Name of Block	1998-99			2008-09		
		Area (ha)	Production (quintals)	Productivity (quintals/ha)	Area (ha)	Production (quintals)	Productivity (quintals/ha)
1	Balisankara	15,316	1,70,598	11.14	14,956	2,67,389	17.88
2	Bargaon	10,823	1,24,595	11.51	12,683	2,76,969	21.84
3	Bisra	8,777	1,12,436	12.81	8,300	1,84,737	22.26
4	Bonaigarh	9,366	70,400	7.52	13,178	2,17,795	16.53
5	Gurundia	12,721	1,39,410	10.96	10,389	1,41,501	13.62
6	Hemgiri	8,928	1,25,721	14.08	11,648	3,04,000	26.10
7	Koida	6,212	56,378	9.08	4,118	50,039	12.15
8	Kuarmunda	18,823	2,15,541	11.45	19,166	3,87,497	20.22
9	Kutra	15,912	1,59,058	10.00	16,031	3,01,824	18.83
10	Lahunipada	13,399	1,44,453	10.78	13,625	2,19,483	16.11
11	Lathikata	10,477	1,05,708	10.09	12,043	2,31,445	19.22
12	Lephipada	14,625	2,06,980	14.15	12,167	2,49,015	20.47
13	Nuagaon	19,523	2,41,004	12.34	15,869	3,90,638	24.62
14	Rajgangpur	13,580	1,15,511	8.51	13,548	3,45,652	25.51
15	Subdega	14,427	1,31,729	9.13	14,848	2,75,936	18.58
16	Sundargarh	13,607	1,58,751	11.67	12,775	3,02,782	23.70
17	Tangarpalli	10,712	2,12,347	19.82	10,800	2,81,672	26.08

Source: District Statistical Handbook, 2009, Sundargarh; Directorate of Economics, Odisha, 2009

Productivity (quintal per ha), area (ha) and production (quintals) of major crops in the district are compared in Table 2.22 for the year 2007-08 and 2008-09. Paddy is still the main crop in the district. Its productivity was reported 21.05 quintals / ha in 2007-08 and 20.54 quintals / ha in 2008-09. The area and production under paddy were 216,374 ha and 4,554,589 quintals in 2007-08 and 218,438 ha and 4,485,955 quintals in 2008-09. Productivity, area and production for wheat, pulses (mung, biri and kulthi), oilseeds (til,

groundnuts and mustard), potatoes and sugarcane are summarised in Table 2.22. A comparison of productivity, area and production of paddy by blocks of the district has been summarised in Table 2.23 for the year 1998-99 and 2008-09. It may be observed that Hemgiri and Tangarpalli blocks reported highest productivity (26.10 quintal per ha and 26.08 quintal / ha respectively) and Koida and Gurundia blocks reported lowest productivity (12.15 quintal/ha and 13.62 quintals/ha respectively) of paddy in 2008-09.

Seed Supply

Seed replacement is also one of the strategies to promote crops and crop productivities. The State Agriculture Department has been providing seed inputs of different crops to farmers. During 2009 Kharif crop, farmers were supplied with seeds at subsidised rates through departmental sale centre, Odisha Seed Supply Corporation (OSSC) and four

agricultural farms. About 14,284.60 quintal seed of paddy, 1,509.10 quintal seed of groundnuts and 159.59 quintal non-paddy seeds were provided to farmers. Table 2.24 and Table 2.25 summarise the supply of seeds of different crops sown in Kharif and Rabi seasons respectively during 2009-10, 2010-11 and 2011-12.

Table 2.24: Seeds Provided to Farmers in Kharif by Crops in Sundargarh District: 2009-10, 2010-11 and 2011-12 (in quintals)

Types of Crops	2009-10	2010-11	2011-12
Paddy	15,434.30	18,066.65	19,098.10
Maize	30.03	818.01	166.02
Mung	29.60	20.00	60.20
Biri	25	30.00	60.60
Arhar	19.36	28.20	52.20
Groundnut	1,955.23	2,068.07	1,313.70
Til	9	2.26	0.00
Dhanicha	90	112.80	128.90

Source: Odisha Agriculture Statistics, 2009-10, 2010-11 and 2011-12

Table 2.25: Seeds Provided to Farmers in Rabi by Crops in Sundargarh District: 2009-10, 2010-11 and 2011-12

Types of Crops	2009-10	2010-11	2011-12
Paddy	316.2	69.90	127.50
Wheat	1,369.6	1,289.40	1,019.60
Maize	1.0	0.00	0.00
Moong	10.0	95.00	30.00
Biri	0	27.68	9.00
Gram	596.6	119.95	119.90
Field pea	39.9	45.00	60.00
Groundnut	605.5	80.94	589.91
Mustard	229.6	260.30	253.68
Til	12.0	8.00	0.00
Sunflower	14.0	27.50	29.50

Source: Odisha Agriculture Statistics, 2009-10, 2010-11 and 2011-12

Fertiliser Consumption

Fertiliser consumption rate in the district was 44.80 kg / ha in 2009-10 against the State average of 59.78 kg / ha. Fertiliser consumption got reduced to 39.83 kg / ha during 2010-11 and 38.5 kg / ha against the State averages of 62.85kg / ha in 2010-11 and 62.25 kg / ha in 2011-12. Consumption of

fertiliser in different blocks has been compared in 1998-99 and 2008-09 in Table 2.26. There is considerable scope for increasing the use of fertilizers in irrigated and other areas to increase yields. At the same time, there is also need to promote organic manures and vermin composts to enhance land productivity.

Table 2.26: Comparison of Fertiliser Consumption by Blocks in Sundargarh: 1998-99 & 2008-09

(Figures in '000 MT)

S. N.	Name of Block	Nitrogenous		Phosphoric		Potassic		Total	
		1998-99	2008-09	1998-99	2008-09	1998-99	2008-09	1998-99	2008-09
1	Balisankara	0.16	0.39	0.08	0.25	0.05	0.08	0.29	0.72
2	Bargaon	0.17	0.34	0.08	0.21	0.04	0.07	0.29	0.62
3	Bisra	0.2	0.23	0.07	0.17	0.07	0.05	0.34	0.45
4	Bonaigarh	0.26	0.37	0.11	0.24	0.07	0.08	0.44	0.69
5	Gurundia	0.19	0.37	0.08	0.24	0.05	0.08	0.32	0.69
6	Hemgiri	0.15	0.39	0.07	0.24	0.04	0.08	0.26	0.71
7	Koida	0.22	0.33	0.09	0.22	0.06	0.07	0.37	0.62
8	Kuarmunda	0.31	0.48	0.12	0.31	0.08	0.1	0.51	0.89
9	Kutra	0.15	0.38	0.07	0.23	0.05	0.07	0.27	0.68
10	Lahunipada	0.28	0.42	0.12	0.27	0.08	0.09	0.48	0.78
11	Lathikata	0.37	0.54	0.14	0.35	0.09	0.11	0.6	1.00
12	Lephipada	0.18	0.34	0.08	0.22	0.06	0.07	0.32	0.63
13	Nuagaon	0.45	0.62	0.21	0.42	0.13	0.14	0.79	1.18
14	Rajgangpur	0.15	0.4	0.07	0.25	0.05	0.08	0.27	0.73
15	Subdega	0.16	0.34	0.09	0.21	0.05	0.07	0.3	0.62
16	Sundargarh	0.18	0.39	0.09	0.23	0.06	0.07	0.33	0.69
17	Tangarpalli	0.17	0.35	0.09	0.21	0.06	0.07	0.32	0.63
Sundargarh District		3.75	6.68	1.66	4.27	1.09	1.38	6.50	12.33

Source: Department of Agriculture, Sundargarh, 2011

Farm Mechanisation

Farm mechanisation promotes good cultivation practices and helps enhance productivity. This also helps tackle labour shortages. The State Government has been promoting farm mechanisation through subsidised provisioning of agricultural implements. Further, Government of India has also been promoting farm mechanisation through various crop promotion programmes such as Rice Development Work Plan, Integrated Scheme of Oil seeds, Pulses, Oil Palm and Maize (ISOPOM), National Food Security Mission (NFSM) and Rashtriya Krishi Vikas Yojana (RKVY). In particular, power operated machinery like

tractors, power tillers, paddy reapers, combined harvesters, rotavators and other implements are promoted at subsidised rate. However, farm mechanisation in the district has been progressing at a very slow pace. In 2006-07, only 200 tractors, 100 rotavators and 20 power tillers were purchased. Table 2.27 reports the pace of farm mechanisation in the district. It may be observed that there was a pick-up in farm mechanisation in 2009-10, but the same pace could not be maintained in 2010-11 and 2011-12 as may be seen from Table 2.27. Sundargarh, Tangarpalli and Subdega blocks have, however, shown good performance in farm mechanisation.

Table 2.27: Farm Mechanisation in Sundargarh District: 2009-10, 2010-11 and 2011-12

Particulars	2009-10	2010-11	2011-12
Tractor	1,708	360	247
Power Tiller	7,619	516	443
Self-propelled Reaper	45,410	89	56
Self-propelled Transplanter	2,611	2	2
Power Operated Implements	13	0	48
Power Thresher	9	9	20
Special Power Operated Implements	22	13	9
Hydraulic Trailer	0	0	1
Combined Harvester	1	0	0
Pump Sets	835	1,214	400
Manual Implements	210	488	130

Source: Odisha Agriculture Statistics, 2009-10, 2010-11 and 2011-12

Irrigation

The State Government has taken several steps to augment irrigation facilities in the district. Table 2.28 reports irrigation potential created in 2010-11 and 2011-12 through major, medium, minor irrigation projects and other sources. It may be observed that irrigation potential created in 2010-11 was 129,383 ha (91,229 ha in Kharif

and 38,154 ha in Rabi season) and in 2011-12, 126,912 ha (88,253 ha in Kharif and 38,659 ha in Rabi season) of net sown area. However, available irrigation facilities provide irrigation to only 32.22 percent of the net sown area and 67.78 percent net sown area is still rain-fed. There is thus considerable scope to enhance irrigation facilities in the district through different sources.

Table 2.28: Irrigation Potential Created in Sundargarh District: 2010-11 and 2011-12

(area in 000 ha)

Irrigation	2010-11		2011-12	
	Kharif	Rabi	Kharif	Rabi
Major and Medium	13.460	7.480	13.460	7.480
Minor (Flow)	27.969	3.859	28.004	3.901
Minor (Lift)	16.504	9.374	17.373	9.926
Other Sources	33.296	17.441	29.416	17.352
Total	91.229	38.154	88.253	38.659

Source: Odisha Agriculture Statistics, 2010-11 and 2011-12

Chart 2.3: Map of Ground Water Exploitation in Sundargarh District

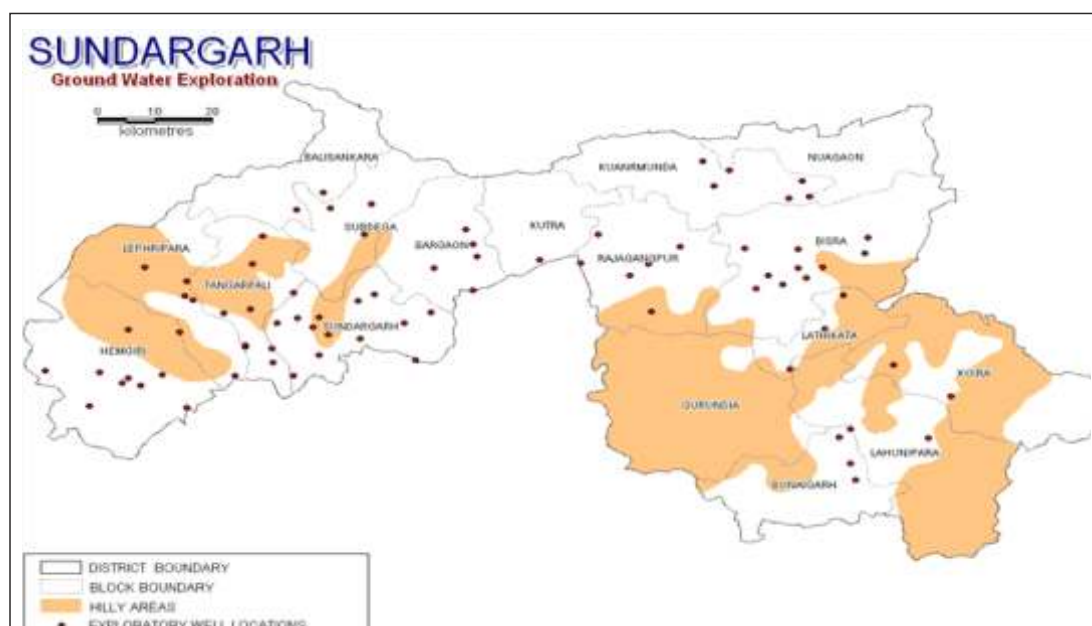


Table 2.29: Irrigation Status by Block in Sundargarh District: 1998-99 and 2008-09

S N	Name of Block	Net Area Sown (ha)		Unirrigated Area (ha)		Irrigated Area (ha)		Area Irrigated (Percent)		Growth (Percent) 1998-99: 2008-09
		1998-99	2008-09	1998-99	2008-09	1998-99	2008-09	1998-99	2008-09	
1	Balisankara	17,502	16,040	12,407	9,501	5,095	6,539	29.11	40.77	11.66
2	Bargaon	11,318	13,652	10,112	9,957	1,206	3,695	10.66	27.07	16.41
3	Bisra	9,587	8,953	8,408	5,650	1,179	3,303	12.3	36.89	24.59
4	Bonaigarh	9,943	12,375	7,249	9,458	2,694	2,917	27.09	23.57	-3.52
5	Gurundia	13,333	10,565	12,951	8,618	382	1,947	2.87	18.43	15.56
6	Hemgiri	9,510	12,441	8,074	8,992	1,436	3,449	15.1	27.72	12.62
7	Koida	7,297	4,308	6,550	2,338	747	1,970	10.24	45.73	35.49
8	Kuarmunda	21,489	21,233	16,567	17,860	4,922	3,373	22.9	15.89	-7.02
9	Kutra	18,141	17,927	16,980	14,726	1,161	3,201	6.4	17.86	11.46
10	Lahunipada	13,924	13,925	10,792	7,640	3,132	6,285	22.49	45.13	22.64
11	Lathikata	11,116	12,519	7,840	6,700	3,276	5,819	29.47	46.48	17.01
12	Lephrpada	15,188	12,455	8,609	5,572	6,579	6,883	43.32	55.26	11.95
13	Nuagaon	21,478	17,423	20,228	14,243	1,250	3,180	5.82	18.25	12.43
14	Rajgangpur	15,469	14,767	10,180	7,990	5,289	6,777	34.19	45.89	11.70
15	Subdega	14,466	15,288	10,718	9,890	3,748	5,398	25.91	35.31	9.40
16	Sundargarh	14,371	13,377	12,160	9,002	2,211	4,375	15.39	32.71	17.32
17	Tangarpalli	10,753	11,107	9,860	6,633	893	4,474	8.3	40.28	31.98
	Total	234,885	228,355	189,685	154,770	45,200	73,585	19.24	32.22	12.98

Source: Directorate of Economic and Statistics, Odisha; DDA, Sundargarh



Though there is considerable increase in irrigation potential in 2008-09 as compared to 1998-99, irrigation potential varies widely across different blocks. Table 2.29 summarises status of irrigation in different blocks of the district. It may be observed from Table 2.29 that there was 62.80 percent increase in irrigated area from 45,200 ha (19.24 percent) in 1998-99 to 73,585 ha (32.22 percent) in 2008-09. Lephripada block (55.26 percent) and Lathikata block (46.48 percent) reported highest irrigation areas and Kuarmunda block (15.89 percent) and Kutra block (17.86 percent) had lowest irrigated areas in 2008-09 in the district. Lack of availability of irrigation facilities in the district is a major constraint to developing agriculture. Further, ground water

exploitation for irrigation remains only at 13.5 percent which is very low. A map of ground water exploitation in the district has been shown in Chart 2.3.

Minor irrigation sources have been one of the major sources of irrigation in the district as may be seen from Table 2.30. The district has 75 Minor Irrigation Projects (MIP) with the designed ayacut of 18,492.2 ha in Khariff and 4,703.0 ha in Rabi season. Another 10 MIP are at different stages of construction. The certified ayacut to the designed ayacut is 83.47 percent in Kharif and 24.41 percent in Rabi. Around 10 MIP are derelict. Thirty-six MIP are of less than 40 ha ayacut each and have been handed over to different gram panchayats. Several Lift Irrigation Points (LIP) are also operational in the district.

Table 2.30: Status of Minor Irrigation Projects by Blocks in Sundargarh District

S. No	Name of Block	Completed Project						Derelict project(P/C)						Ongoing project			
		GP covered	Projects		Designed Ayacut		Certified Ayacut		Projects	Designed Ayacut		Certified Ayacut		Projects		Designed Ayacut	
			Rabi	Khariff	Rabi	Khariff	Rabi	Khariff		Rabi	Khariff	Rabi	Khariff	Rabi	Khariff		
1	Balisankara	6	5	2,984.0	364.0	2,450.0		1	81.0	-	-	-	-	-	-	-	-
2	Bargaon	6	9	857.4	1,210.0	1,027.3	68.6	-	-	-	-	-	-	3	570.0	40.0	-
3	Bisra	2	2	648.0	44.0	627.6	18.2	-	-	-	-	-	-	-	-	-	-
4	Bonaigarh	4	9	1,213.0	140.0	985.4	40.3	3	154.3	-	30.0	-	-	-	-	-	-
5	Gurundia	1	1	41.8	8.0	45.7		-	-	-	-	-	-	1	175.0	-	-
6	Hemgiri	4	3	728.0	102.0	673.0	36.9	2	243.0	-	-	-	-	-	-	-	-
7	Koinda	2	1	582.0	453.0	582.0	300.0	-	-	-	-	-	-	-	-	-	-
8	Kuarmunda	3	2	611.0	162.0	456.4	23.0	-	-	-	-	-	-	-	-	-	-
9	Kutra	2	2	188.0		188.2	15.3	-	-	-	-	-	-	3	680.0	40.0	-
10	Lahunipada	9	7	4,435.0	2,489.0	3,424.9	425.7	1	61.0	-	20.0	-	-	-	-	-	-
11	Lathikata	2	3	487.0	12.0	93.5		-	-	-	-	-	-	-	-	-	-
12	Lephipada	10	9	3,614.0	567.0	2,758.5	193.3	1	41.0	-	-	-	-	-	-	-	-
13	Rajgangpur	2	2	142.0		134.0	-	-	-	-	-	-	-	2	890.0	70.0	-
14	Subdega	3	5	352.0	12.0	386.7	-	-	-	-	-	-	-	1	142.0	41.0	-
15	Sundargarh	9	11	1,040.0	209.0	1,011.9	12.1	1	364.0	211.0	79.3	-	-	-	-	-	-
16	Tangarpalli	4	4	569.0	20.0	590.2	13.9	1	1,019.0	-	-	-	-	-	-	-	-
	Sundargarh District	69	75	18,492.2	4,703.0	15,435.8	1,147.8	10	1,963.3	211.0	129.3	-	-	10	2,457.0	191.0	-

Source: M.I. Division, Sundargarh, 2010-11

Soil and Water Conservation Measures

The problem of soil erosion is acute, particularly in hilly areas, in the district. Several factors, such as undulating topography, forest degradation, inappropriate cultivation practices and shifting cultivation, have contributed to soil erosion in the district. Shifting cultivation is widely practiced in tribal pockets of the district. Soil erosion causes different forms of rills and gullies and diminishes soil productivity. In order to protect top soil from erosion and to reduce the loss of soil moisture, the State Government has taken a number of anti-erosion measures, such as, contour bounding, gully control, and other soil and water conservation measures. Soil and water conservation measures are taken by five Soil Conservation Sub-divisions situated at Sundargarh, Bargaon, Panposh, Lahunipara and Bonai. Different centrally sponsored programs such as National Watershed Development Project for Rain-fed Area (NWDPR), Rashtriya Krishi Vikas Yojana (RKVY), Integrated Wasteland Development Programme (IWDP), Integrated Watershed Management Programme (IWMP), River Valley Project

(RVP) and Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) have been implemented in the district. Watershed activities are also implemented under RKVY in 15 blocks of the district with focus to improve people's livelihood.

With the support under IWDP, 30 watershed development programmes have been implemented in Bonai, Tangarpali and Lahunipada blocks. Under Integrated Watershed Management Programme, 74 watersheds have treated in Gurundia, Lathikata, Kutra, Balisankara, Hemgir, Lefripara, and Rajgangpur blocks with treatable area of 37,012 ha. Watershed management has also been undertaken under River Valley Project in Lephripada and Subdega blocks covering total eight villages, i.e., six villages of Lephripada and two villages of Subdega block. Under MGNREGA, several soil and water conservation measures have been promoted. In addition, other activities including construction of farm ponds, field bunding, cashew plantation, construction of water harvesting structures and others have also been taken up in the district. Table 2.31 summarises some of the activities that have been implemented in the district under MGNREGA.

Table 2.31: Soil and Water Conservation Measures under MGNREGA in Sundargarh: 2010-11

Item of work	Physical Progress		Financial Progress (Rs. lakh)	
	Target	Achievement	Target	Achievement
Farm pond (Number)	1,732	747	483.2	132.35
Field bunding (ha)	563.7	474.2	169.1	61.19
Hybrid Cashew plantations (ha)	100	182.1	30.0	6.78
NRM Convergence (NWDPR) (ha)	2,434.2	212.6	270.2	23.61
NRM Convergence (RVP) (ha)	1,294	-	109.9	-
Water Harvesting Structure (Number)	34	16	152.1	30.29
Sundargarh District	-	-	1,062.5	254.23

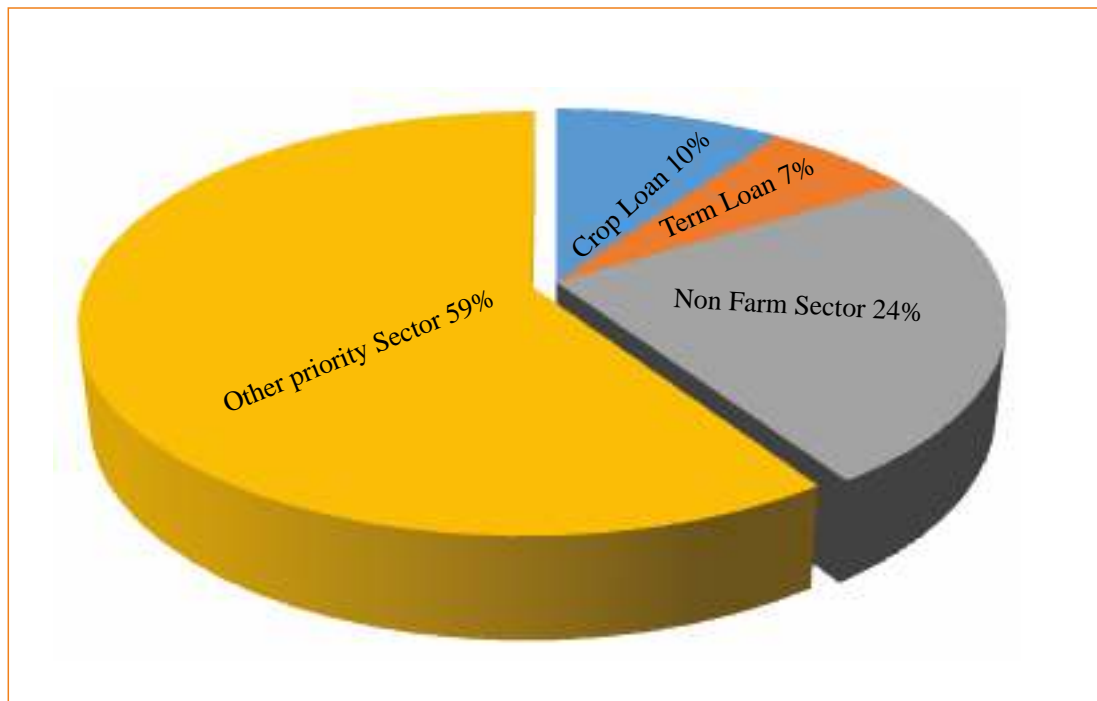
Source: Soil Conservation Department; Sundargarh, 2012

Agricultural credit

Access to easy and affordable credit is a major concern for farmers in Odisha. Therefore, State and Central Governments have taken several steps to provide easy access to affordable credit for them. All commercial and co-operative banks are encouraged to augment priority sector credit to agriculture and allied activities. Interest subventions are also allowed for easy and affordable credit. In fact, Co-operative Banks play a leading role in providing crop and term loans to farmers. NABARD prepares annual Potential Linked

Credit Plan (PLP) for each district. Salient features of PLP for Sundargarh district for the year 2011-12 are summarised in Table 2.32. It may be observed that as per the PLP for the district, crop loans are projected at Rs.273.64 crore and agricultural term loans are projected at Rs.185.86 crore. Credit for non-farm sector is projected as Rs.688.73 crore and for other priority sectors Rs.1,682.47 crore. However, PLP projections are seldom realised. Actual credit advanced are much less than the PLP projections.

Chart 2.4: Crop Loan Disbursement in Sundargarh District



It may be observed from Chart 2.4 that crop loans account for 10 percent of total agriculture credit. Term loan constitute about 7 percent and other priority sectors account for 59 percent of total agriculture credit. Non-farm sector accounts for a quarter (24 percent) of total credit. Total agriculture credit provided by District Central Co-operative Bank Ltd to farmers during 2008 Khariff crop was of the order of Rs.40 crore and for 2009 Kharif season, the Bank targeted an increase in credit flow to

agriculture sector by 97.92 percent, but actual disbursement was only Rs. 8.47 crore to 6,533 farmers. In 2009-10, total targeted amount of agricultural credit (crop loan) for disbursement was 194.26 crore, but only Rs.109.79 crore (56.52 percent of the targeted amount) was disbursed. However, in 2010-11, the crop loan disbursement was Rs.132.75 crore only. Further, in 2011-12, total crop loan disbursed was Rs.274.30 crore only, an achievement of 110.06 percent of the crop loan target.

Table 2.32: Potential Linked Credit Plan Projections by Sectors for Sundargarh District: 2011-12

(Rs. lakh)

Sector	PLP Projection
Crop Loan	27,364.10
Water Resources	2,529.51
Land Development	580.35
Farm Mechanisation	9,464.20
Plantation and Horticulture	672.15
Forestry and waste Land Development	130.80
AH-Dairy Development	888.25
AH- Poultry Development	966.31
AH- Sheep/Goat/Piggery Development	901.00
Fisheries Development	626.80
Storage Godowns/Market Yards	1,372.05
Agro and Food processing	16.20
Renewable Sources of Energy and Waste Utilisation	154.00
Others (Agriculture)	284.80
Total Term Loans for Agriculture	18,586.42
Total Agricultural Credit (Term Loans and Crop Loans)	45,950.52
Non-Farm Sector-Investment Working Capital	68,872.48
Other priority Sector	1,68,247.3
Total	347,607.20

Source: Potential Linked Credit Plan, Sundargarh, 2011-12

The district has a good bank network with 158 retail banking outlets as well as 44 LAMPS that play an important role in providing credit and other services to the rural people. The SBI is the Lead Bank of the district and carries out the credit plan for the district. Kisan Credit Card (KCC) scheme has been implemented in the district. Around 2.36 lakhs KCC have been issued till 31st March 2010. The sustainable credit flow to the Rastrya Krishi Bima Yojana (RKBY) during the year 2011-12 has been projected at Rs. 273.64 crore. Credit flow to Minor Irrigation sector during the year 2011-12 has been projected at Rs. 25.29 crore.

Agriculture Promotion Initiatives

Seed Village Scheme

With the objective of making the district self-

sufficient in quality seeds, Government has taken up seed village program to produce foundation seeds for supply to farmers. Under the scheme, certified and foundation seeds are supplied to farmers at subsidised rates.

Jalanidhi

As per State Agricultural Policy 2008, under Jalanidhi, farmers are encouraged to establish private Lift Irrigation Points (mainly bore wells and dug wells) for meeting their irrigation needs. The objective of the scheme is to create 38 percent irrigation potential in each block of the district. In each project, Government provides 50 percent subsidy subject to specified higher limits. Achievements under this scheme are given in Table 2.33 for the period from 2009-10 to 2011-12.

Table 2.33: Achievements under Jananidhi in Sundargarh District: 2009-10 to 2011-12

Irrigation Sources	2009-10	2010-11	2011-12
Dug Wells	65	69	60
Bore Wells	79	154	260
Sundargarh District	144	223	320
Command Area (ha)	223	359.75	565

Source: Odisha Agriculture Statistics of various years

Capacity Building

Under different Government programmes, farmers are trained and oriented on different farm related activities through village level trainings, field demonstrations, Farmers Field Schools (FFS), exposure visits to different places where they interact with progressive farmers and other knowledge resources. These activities are taken up with active participation of local NGO / CBO. Different agriculture related useful knowledge is disseminated to farmers in shape of leaflets, ATMA news (*Samachar*), exhibition and other forms.

NFSM-Rice

The objective of NFSM-Rice is to enhance production and productivity of rice through area expansion, restoration of soil fertility at individual farms and creation of gainful employment opportunities for farmers and agricultural labourers. Under NFSM-Rice, SRI hybrid paddy demonstrations have been implemented in 17 blocks through providing critical inputs to farmers. Mini-kits are also provided to the paddy growers along with farm mechanisation and other input support in a subsidised form.

RKVY

A number of supportive initiatives are taken up under Rashtirya Krishi Vikas Yojana (RKVY). Such initiatives also include opening of vermin hatchery, vermin compost units, infrastructure development and other promotional activities.

ISOPOM

To increase production and productivity of oilseeds, Government has taken up ISOPOM

demonstrations on farmers' fields and supply of mini-kits and encourage farmers through field demonstrations.

Soil Sample Testing

To ascertain the availability of key nutrients in soil and to apply balanced doses of fertilizers to crops, soil samples are collected from farmers' fields and soils get tested in the labs at nominal costs and after analysis soil health cards are issued to farmers. Farmers are advised to adopt scientific soil management practices so that production and productivity are improved at reasonable input costs. This results in higher incomes to farmers.

Biological methods of Pest Management

To popularize Integrated Pest Management (IPM) and to reduce the application of synthetic fertilisers, egg parasites are supplied to farmers at nominal costs to manage stem-borer in paddy. Egg parasites and pupal parasites are reared in the District Bio-Control Laboratory, Sundargarh and supplied to farmers.

Key Challenges

Inadequate irrigation facilities in all parts of the district, insufficient insurance coverage for loss of different crops, lack of easy and affordable credit and affordable supply of agricultural labour are some of the problems farmers face in the district. Timely availability of quality seeds and other inputs such as fertilizers are other major constraints that farmers face. Poor infrastructure and poor marketing opportunities for farmers are other concerns. There is also a need for improved extension services to farmers.

2.6.2 Horticulture

The district has a good scope for promotion of horticultural crops, particularly off-season vegetables, fruits and flowers. Agro climatic conditions, land types and soils of Sundargarh district are well-suited for growing vegetables, spices and fruit crops. Since 56 percent of total cultivated area is high land and 80.5 percent land is rain-fed, there is enormous scope for dry land horticulture and particularly for plantation crops like banana, mango, guava, lime, litchi, papaya and others. The district has considerable demand for horticultural products, particularly in urban areas such as Rourkela, Rajgangpur, Biramitrapur, Bonai and Sundargarh. Horticultural crops have become popular in several blocks including Nuagaon, Bisra, Lathikata, Rajgangpur, Kutra and Sundargarh. The area, production and productivity of different horticultural crops of the district are presented in Table

2.34. It may be observed from Table 2.34 that area under major horticultural crops including fruits, vegetables and floriculture has been on the rise. Productivity of various horticultural crops has also been improving over time as farmers are getting experience in cultivating various horticultural crops. District produces variety of vegetables and spices including potatoes, sweet potatoes, onions, garlic, chillies, coriander, seasonal and off-season vegetables. Main horticultural plantations of different species (e.g., mango, litchi, k-lime, cashew and banana) and by select blocks are given in Tale 2.35. There are six nurseries in public sector and eight registered nurseries in private sector. Government has been encouraging farmers to raise private nurseries so that they can meet their own demand for quality seedlings and may also sell in the open market and earn additional income.

Table 2.34: Area, Production and Productivity of Some Horticultural Crops in Sundargarh: 2007-08 to 2011-12

Crops	2007-08			2008-09			2011-12		
	Area (ha)	Production (MT)	Productivity (MT/ha)	Area (ha)	Production (MT)	Productivity (MT/ha)	Area (ha)	Production (MT)	Productivity (MT/ha)
Fruit Crops									
Mango	6,560	22,304	3.40	7,060	24,710	3.50	8,826	33,594	3.80
Guava	816	5,410	6.63	826	5,476	6.63	826	6,249	7.60
Citrus	1,612	11,606	7.20	1,672	12,707	7.60	1,680	19,240	11.5
Litchi	928	2,478	2.67	968	2,478	2.56	932	4,539	4.90
Sapota	27	116	4.31	28	118	4.21	25	146	5.80
Banana (lakh pieces)	1,236	15,537	12.57	1,243	15,662	12.60	1,592	30,534	19.20
Papaya (lakh pieces)	56	998	17.83	65	1,184	18.21	104	2,258	21.70
Pineapple	15	155	10.33	17	175	10.29	10	102	10.20
Other fruits	2,610	23,281	8.92	2,714	23,748	8.75	3,217	27,887	8.70
Flowers									
Rose (lakh stems)	2.2	6.50	2.95	38	163.40	4.30	102	202	2.00
Tuberose (lakh spikes)	1	2.5	27	56.70	2.10	19	450		23.70
Gladioli (lakh spikes)	1	0.98	0.98	60	48	0.80	101	101	1.00
Marigold (quintals)	21	10.50	0.50	70	35	0.50	131	12,000	91.60

Source: Department of Horticulture, Sundargarh, 2013

Table 2.35: Fruit Plantations by Species and by Blocks in Sundargarh District: 2008-09

Name of Block	Crop	Target (ha)	Achievement (ha)	Beneficiaries covered				
				SC	ST	OC	Total	Women
Sundargarh	Mango	190	190	8	108	82	198	0
Panposh		180	180	5	131	88	224	18
Bonai		105	105	13	96	20	129	3
Total		475	475	26	335	190	551	21
Sundargarh	Litchi	40	20	2	14	22	38	0
Panposh		30	7.6	0	7	6	13	0
Bonai		30	25	0	29	5	34	0
Total		100	52.6	2	50	33	85	0
Sundargarh	K.Lime	20	20	0	9	16	25	0
Panposh		15	15	0	19	8	27	1
Bonai		15	15	1	20	1	22	0
Total		50	50	1	48	25	74	1
Sundargarh	Cashew	100	75	2	40	35	77	0
Panposh		70	42.5	1	32	13	46	2
Bonai		75	54	1	31	18	50	1
Total		245	172	4	103	66	173	3
Sundargarh	Banana (incl.t.c.)	67	31	2	10	32	44	1
Panposh		52	30	0	16	11	27	0
Bonai		51	15	0	3	3	6	0
Total		170	76	2	29	44	77	1

Source: Deputy Director Horticulture, Sundargarh, 2011

Agro-Processing and Storage

Opportunities for processing agro and horticultural produce in the district are very limited. Processing of horticultural produce is particularly important as there is otherwise considerable wastage of horticultural produce. Some of the horticultural produce is perishable. Processing, therefore, does not only add value to horticultural crop, it avoids wastage also. There are two units for processing fruits and vegetables. One such unit is at Panposh and the other at Sundargarh.

Horticulture Development Initiatives

Under National Horticulture Mission, Government has taken different initiatives to promote horticultural crops in the district. Some initiatives are discussed below.

Establishment of Model and Small Nursery in Public Sector

The objective for setting up of model and small nurseries in public sector is to produce Quality Planting Materials (QPM) on different fruit plants to make the district self-sufficient.

Establishment of New Garden

Assistance up-to 75 percent of total cost limited to Rs 22,500 per ha for mango, litchi and K-lime and Rs 11, 250 per ha for cashew is provided to a beneficiary over a period of three years in the ratio of 50:20:30 subject to survival of not less than 75 percent of plant material in the 2nd year and 90 percent in the 3rd year. While in case of banana, Rs.15,000 per ha is provided in the ratio of 70:30.

Floriculture

Recently, floriculture is gaining momentum in the district. Required quality planting materials (QPM) for rose, gladioli, tuberose and marigold are supplied to farmers for promotion of floriculture.

Human Resource Development

Training is an integral part to develop technical knowhow of farmers and staff. Selected farmers are provided with exposure visits, both inside and outside the State, to gain knowledge and replicate it their farms.

Organic farming

Efforts have also been made to popularise organic farming. Assistance is given to farmers for construction of vermi compost pits. In 2008-09, some 156 farmers benefited from this initiative and 51 vermi-compost

units were established in the district. The use of organic manures and integrated pest management systems are encouraged in place of chemical fertilisers and pesticides.

Controlled Cultivation

Farmers are also assisted to raise planting material under controlled and protected conditions. Aim is to control temperature, sunlight and relative humidity of the micro environment by constructing green houses, shade net houses, plastic tunnels and mulching.

2.6.3 Animal Husbandry

Rearing animals is a traditional practice of people. Animal husbandry is both a source of additional income and nutrition as well as a copying mechanism during distress. Animals like goats, sheep, cows and buffalos are reared for milk, meat and calves. Many rural families rear small ruminants along with other cattle. In addition, people also rear poultry. Table 2.36 reports population of cattle and other animals as per 2001 and 2003 census. It is evident from Table 2.36 that population of cattle and other animals declined between 2001 and 2003. Table 2.37 compares population of cattle and other animals by blocks as per 2007 census.

Table 2.36: Cattle Population of Sundargarh District: 2001 and 2003

Livestock	Census 2001			Census 2003			Growth (Percent)
	Male	Female	Total	Male	Female	Total	
Cattle (Ind.)	433,031	262,372	695,403	407,864	249,717	657,581	- 5.44
Cattle (CB+E)	6,552	18,583	25,135	7,722	16,234	23,956	- 4.69
Total Cattle	-	-	720,538	-	-	658,918	- 8.55
Buffalo	37,896	17,056	54,952	35,410	19,676	55,086	0.24
Cattle and Buffalo	-	-	775,490	-	-	714,004	- 7.93
Sheep	26,114	40,470	66,584	18,112	32,911	51,023	- 23.37
Goat	147,321	292,528	439,849	132,347	274,652	406,999	- 7.47
Pig	-	-	117,815	-	-	97,918	- 16.89
Poultry Birds	-	-	1,334,307	-	-	1,190,422	- 10.78

Source: Animal Husbandry Statistical Hand book, 2009; Note: Ind.- Indigenous, CB- Cross Breed, E- Exotic

Table 2.37: Livestock Population by Block and ULB in Sundargarh District: 2007(P)

SL. No.	Name of Block/ULB	Cattle	Buffalo	Goat	Sheep	Pig	Milch Animal
Block							
1	Balisankara	49,825	1,283	41,318	605	2,542	3,971
2	Bargaon	46,611	871	2,882	1,676	3,381	5,979
3	Bisra	18,376	4,071	19,241	2,482	1,758	2,067
4	Bonaigarh	30,110	1,856	18,919	2,755	914	3,241
5	Gurundia	41,937	3,977	39,986	823	6,995	6,083
6	Hemgiri	35,939	3,329	26,455	259	363	4,771
7	Koida	26,980	2,169	23,262	1,398	2,423	3,244
8	Kuarmunda	63,778	1,517	51,561	4,256	7,819	7,731
9	Kutra	37,004	547	25,992	2,946	4,663	3,424
10	Lahunipada	42,510	5,340	70,239	3,536	3,191	5,851
11	Lathikata	37,478	4,238	34,264	1,226	4,700	4,573
12	Lephripada	43,114	1,334	30,686	70	2,906	4,271
13	Nuagaon	54,721	5,016	45,889	9,344	8,113	5,610
14	Rajgangpur	40,420	2,409	29,963	2,969	3,467	3,721
15	Subdega	40,125	1,324	28,031	787	2,205	4,402
16	Sundargarh	39,706	2,077	20,092	1,042	1,692	4,740
17	Tangarpalli	31,581	1,609	15,692	149	927	3,398
ULB							
1	Biramitrapur	1,077	217	1,278	0	414	271
2	Rajgangpur	3,268	3,723	1,655	178	268	609
3	Rourkela	8,976	3,233	7,166	104	1,372	4,483
4	Sundargarh	3,418	189	1,192	0	85	627
Sundargarh District		687,313	52,857	354,623	53,122	98,895	83,067

Source: CDVO, Sundargarh, Livestock Census Report, 2007

P. Provisional

Table 2.38: Type of Livestock Holding by Families in Sundargarh District: 2011

Type of Livestock	BPL Families	APL Families	Other Families
Buffaloes	58.9	22.7	18.4
Bullock	61.6	22.8	15.7
Fowl	68.1	14.9	17.1
Pig	82.4	5.9	11.8
Goat	70.7	14.7	14.7
Sheep	73.3	6.7	20.0
Other	66.7	16.7	16.7

Source: Primary Field Survey, 2011

The observation that livestock serves as insurance during distress is further attested by a primary field survey that was conducted in the district in 2011. The results of survey indicate that the poor households in general have larger livestock population than better off households. Table 2.38 summarises the results of primary field survey in Sundargarh district in 2011. Livestock provide food and nutrition to BPL households and also become a source of additional income at the time of need, particularly during distress periods.

Table 2.39: Veterinary Institutions & Personnel by Blocks & ULBs of Sundargarh: 1998-2011

SL. No.	Name of Block / ULB	Hospitals / Dispensaries		VAS / AVAS		Livestock Aid Centres		Livestock Inspectors		Artificial Insemination centres	
		1998-99	2010-11	1998-99	2010-11	1998-99	2010-11	1998-99	2010-11	1998-99	2010-11
Block											
1	Balisankara	2	2	2	3	9	9	11	8	3	11
2	Bargaon	1	1	1	2	7	7	8	6	5	8
3	Bisra	1	1	2	2	5	6	5	6	5	7
4	Bonaigarh	2	2	2	3	5	4	7	6	2	6
5	Gurundia	3	3	2	4	7	7	7	7	0	4
6	Hemgiri	2	2	2	3	6	6	8	5	5	0
7	Koida	1	1	1	2	6	5	4	5	3	2
8	Kuarmunda	1	3	2	4	10	10	8	11	8	13
9	Kutra	1	1	1	2	4	4	5	3	2	5
10	Lahunipada	2	2	3	3	6	8	8	8	8	8
11	Lathikata	2	2	3	3	6	7	8	7	8	9
12	Lephipada	2	2	2	3	7	3	9	8	7	2
13	Nuagaon	1	1	1	2	4	4	5	4	2	5
14	Rajgangpur	1	2	1	3	4	4	6	5	1	5
15	Subdega	1	1	1	2	9	9	10	10	2	10
16	Sundargarh	2	3	2	5	10	10	12	11	11	12
17	Tangarpalli	1	1	1	2	5	5	6	4	6	6
ULB											
1	Biramtrapur	1	1	1	1	2	-	2	-	2	-
2	Rajgangpur	1	1	1	1	-	-	1	-	1	-
3	Rourkela	1	1	1	1	-	-	1	-	1	-
4	Sundargarh	2	1	3	2	-	-	1	-	1	-
Sundargarh District		31	30	35	53	112	115	132	-	83	113

Source: CDVO, Sundargarh.

Table 2.40: Block Gomitra Centres and Veterinary Dispensaries in Sundargarh District: 2010-11

S. No.	Name of Block	Gomitra Centres	Veterinary Dispensaries
1	Balisankara	4	4
2	Bargaon	2	2
3	Bisra	3	3
4	Bonaigarh	5	5
5	Gurundia	1	1
6	Hemgiri	4	4
7	Koida	1	1
8	Kuarmunda	4	4
9	Kutra	3	3
10	Lahunipada	4	4
11	Lathikata	5	5
12	Lephripada	3	3
13	Nuagaon	4	4
14	Rajgangpur	4	4
15	Subdega	5	5
16	Sundargarh	2	2
17	Tangarpalli	3	3
Total		57	57

Source: CDVO, Sundargarh, 2010-11

In order to improve livestock status and facilitate improved livestock management practices for better economic gain, a number of livestock health care institutions are in operation in the district. Table 2.39 compares the status of veterinary institutions and veterinary personnel in different blocks and urban areas of Sundargarh district between 1998-99 and 2010-11. It may be observed from Table 2.39 that the number of veterinary hospitals / dispensaries increased from 31 in 1998-99 to 34 in 2010-11. The number of Veterinary Assistant Surgeons (VAS) / Additional Veterinary Assistant Surgeons (AVAS) increased from 35 in 1998-99 to 53 in 2010-11. Livestock Aid Centres, however, got reduced from 112 in 1998-99 to 108 in 2010-11. The number of livestock inspectors got reduced from 132 in 1998-99 to 117 in 2010-11. Artificial insemination centres increased from 83 in 1998-99 to 113 in 2010-11 in Sundargarh district. The number of Block level dispensaries and Gomitra centres has been 57 in 2010-11 as indicated in Table 2.40. Government has taken several measures for livestock development in the district. These measures include artificial insemination, vaccination, disease treatment, organisation of fertility camps and other measures.

Table 2.41: Milk and Egg Production in Sundargarh District: 2003-04 to 2012-13

Year	Milk Production (TMT)				Egg Production (Lakh Numbers)			
	Sundargarh		Odisha		Sundargarh		Odisha	
	Production	Growth	Production	Growth	Production	Growth	Production	Growth
2003-04	32.16	-	995.08	-	294.22	-	9,310.56	-
2004-05	42.72	32.84	1,282.76	28.91	394.57	34.11	12,159.61	30.60
2005-06	56.18	31.51	1,342.30	4.64	423.79	7.41	12,787.12	5.16
2006-07	56.80	1.10	1,430.69	6.58	474.88	12.06	14,252.01	11.46
2007-08	40.82	-28.11	1,620.44	13.26	556.50	17.19	15,494.82	8.72
2008-09	51.65	26.49	1,598.05	-1.38	511.01	-8.17	19,932.63	28.64
2009-10	53.36	3.31	1,651.00	3.31	606.41	18.67	23,193.17	16.36
2010-11	40.47	-24.15	1,670.00	1.15	702.06	15.77	23,571.00	1.63
2011-12	42.79	5.73	1,718.01	2.87	622.94	-11.27	23,007.00	-2.39
2012-13	41.72	-2.50	1,784.00	3.84	630.00	1.13	23,230.00	0.97

Source: Department of Fisheries and Annual Resource Development Department, Odisha.

Production and Yield of Milk and Eggs

Table 2.41 compares production of milk and eggs in Sundargarh district with Odisha from 2003-04 to 2012-13. It may be observed that milk production increased from 32.16 Thousand Metric Tonne (TMT) in 2003-04 to 56.80 TMT in 2006-07. Though milk production has declined in recent years to the order of 40 TMT, the district contributes about 2.5 to 3 percent of total milk production of the State. Egg production increased from 294.22 lakh in 2003-04 to 702.06 lakh in 2010-11. Production of eggs also fluctuates from year to year in both the district and the State. Sundargarh contributes about 3 percent of total egg production of Odisha. Production of meat has been reported to be of the order of 3.2 TMT in the district in 2012-13.

Key Challenges

One of the key challenges is to make animal rearing economically rewarding livelihood option. The sector still has traditional outlook and lacks modern approach, though considerable efforts have been made by the State in promoting health of livestock. Developing fodder farms and promoting production of nutritious fodder and feed for

different cattle and livestock is essential. Though efforts have been made to improve the breed of cattle and other livestock, this aspect deserve further focus. Traditional systems of livestock management may contribute only supplementary incomes. These systems may not yield higher incomes for sustenance of the people.

2.6.4 Fisheries

Fisheries sector has a better scope to become sustainable and rewarding livelihoods option in the district, fish being an important component of local diet. The district is rich in water sources including rivers like IB (96 km), Brahmani (83 km) and their distributaries, five major reservoirs reservoirs namely Sarafgarh, Talsara, Kansbahal, Pitamahal and Mandira with water spread area of 4,264.00 ha and 5435 tanks, ponds, Minor Irrigation project and kattas with additional spread area of 3,384.70 ha. Table 2.42 summarises the availability and suitability of water bodies (other than rivers) for fishing activities. It may be observed from Table 2.42 that out of 5,440 water bodies, other than rivers, with total spread area of 7,648.70 ha, 4,213 water bodies with spread area of 7,025.29 ha are suitable for fishing activities.



Table 2.42: Water Resources in Sundargarh District, 2012

Water Source	Spread Area Available		Spread Area Suitable	
	Number	Area (ha)	Number	Area (ha)
Private Tanks	2,621	1,128.84	2,154	944.00
Gram Panchayat Tanks	2,278	1,184.24	1,810	1,014.99
Revenue Ponds	406	370.14	210	190.17
MIP / Katas	130	701.48	34	612.13
Reservoirs	5	4,264.00	5	4,264.00
Total	5,440	7,648.70	4,213	7,025.29

Source: Department of Fisheries, Sundargarh, 2012

If rivers sources are also taken into account, total water spread area in the district was reported to be 30,013.4 ha in 2009-10 and 30,064.6 ha in 2011-12. Total fish production from all water bodies including rivers was reported 7,132.0 metric tonne (MT) in 2009-10 and 9,115.7 MT in 2011-12 recording a growth of 27.8 percent though there was only marginal increase in area between 2009-10 and 2011-12. Fishing area by sources and production in the district has been compared in Table 2.43 by blocks. It may be observed from Table 2.43 that Bisra and Rajgangpur blocks reported highest growth in fish production between 2009-10 and 2011-12. On the other hand, Lahunipada block reported decline in fish production during the same period. Gurundia block reported lowest positive growth in fish production in the district during the same period.

Government has made several efforts to promote pisciculture in the district. The State Government has already promulgated "Odisha State Reservoir Fishery Policy (OSRFP), 2003". The policy allows leasing out of reservoirs, MIP and Kattas to self help groups of fishermen and others so that they can be gainfully employed and earn additional incomes for their livelihoods. Out of five major reservoirs, Mandira reservoir is under the control of Rourkela Steel Plant and has been leased out of Odisha Fisheries Department for the purpose of fishing. Other reservoirs are under the control of the State Government and are subject to the provisions of OFSRP. Fish farmers and fishermen have been organised into self help

groups and primary fishermen co-operative societies (PFCS) so that community participation is encourage for fishing and promoting pisciculture in the district. SHG / PFCS are also trained and given exposure visits so that they learn modern approaches to fish production and fishing.

It was envisaged in 2009-10 to double fish production in Odisha in next five years from the level of about 7,000 MT in 2009-10 to about 14,000 MT. This can be achieved by horizontal expansion by way of bringing more water area under systematic and intensive culture and adopting latest technology to increase production and productivity such as good stocking of fingerlings and yearlings, use of palette feed, growth promoters and pro-biotic, control of diseases and use of prophylactics, judicious application of manures, fertilizers, vitamin and mineral mixture and other measures. Efforts have also been made increase and improve the production of fingerlings and yearlings for higher production. Several measures have been put in place. These measures include: (i) good stocking of advanced fingerlings (80 mm and above size) for each and every year continuously, (ii) quality of species, sizes and quantity of fingerlings should be maintained strictly, (iii) required area of nursery tanks (NT) and fry rearing tanks (RT) should be developed near reservoir sites to raise required quantity of fingerlings, (iv) fish landing sheds are to be developed at each landing place near reservoirs, and (v) mesh size regulation should be imposed strictly.

Table 2.43: Fresh water fish production and area by block in Sundargarh District

Sl. No.	Name of Block	2009-10						2011-12							
		Pond/Tank		Reservoirs/MIPs		Rivers/Canals		Pond/Tank		Reservoirs/MIPs		Rivers/Canals		Total Production	
		Area	Production	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production		
1	Sundargarh	340.4	752.2	145.7	58.3	3,000	58.9	869.4	328.3	985.0	145.7	29.8	3,000	50.0	1,064.8
2	Tangarpalli	233.1	440.5	104.0	48.5	1,200	78.6	567.6	219.3	647.0	104.0	25.0	1,200	26.5	698.5
3	Lephripara	393.3	786.5	208.7	60.5	420	32.5	879.5	323.4	967.0	208.7	39.0	420	40.0	1,046.0
4	Hengiri	299.8	656.5	50.8	30.5	250	32.5	719.5	315.9	935.0	50.8	27.2	250	35.0	997.2
5	Subdega	129.4	271.7	196.3	78.0	210	10.1	359.8	133.7	386.5	-	-	210	59.0	445.5
6	Balisankara	133.8	254.2	200.9	13.6	2,600	156.8	424.6	149.1	432.3	255.5	48.7	2,600	20.0	501.0
7	Bargaon	232.4	515.9	107.5	43.0	320	5.5	564.4	231.8	676.9	107.5	43.1	320	18.0	738.0
8	Kutra	129.4	244.5	30.0	12.0	20	54.0	310.5	156.4	373.5	30.0	5.0	20	34.0	412.5
9	Rajgangpur	97.6	185.5	1,818.5	80.5	1,600	22.7	288.7	125.4	373.7	1,880.5	72.0	1,600	20.0	465.7
10	Kuarmunda	102.6	195.0	1,810.0	39.7	620	57.0	291.7	109.9	317.6	1,800.0	3.5	620	15.5	336.6
11	Nuagaon	89.1	168.4	-	-	690	33.6	202	76.8	228.3	-	-	690	14.5	242.8
12	Bisra	101.9	192.6	-	-	770	10.5	203.1	119.5	355.0	-	-	770	11.0	366.0
13	Lathikata	115.3	219.0	225.0	4.3	2,300	55.0	278.3	132.7	358.3	225.0	12.0	2,300	45.0	415.3
14	Gurundia	106.3	201.0	-	-	1,270	62.1	263.1	97.5	281.8	-	-	1,270	11.0	292.8
15	Bonai	132.4	278.0	-	-	4,600	93.1	371.1	174.1	520.5	85.0	25.5	4,600	26.0	572.0
16	Lahunipada	211.1	373.7	-	-	2,100	18.0	391.7	109.1	325.0	-	-	2,100	15.0	340.0
17	Koira	66.1	125.0	-	-	230	22.0	147	79.0	171.0	-	-	320	10.0	181.0
	Total	2,916.0	5,860.2	4,897.4	408.9	22,200	802.9	7,132.0	2,881.9	8,334.5	4,892.8	330.8	22,290	450.5	9,115.7

Source: District Fisheries Officer, Sundargarh.

Fish Farms and Breeding Stock

There are four fish farms to producing brood stock. These farms are: Sadar Fish Farm, Sundargarh, Tudalaga, Bisra and Bonai Fish Farms. The Sadar Fish Farm is a Fish Breeding Farm with brood stock of around 651kg and 1.28 ha water spread area to maintain the stock. The farm has a production target of 300 lakh spawn and 25 lakh standard fry. The Farm's own requirement is 85 lakh spawn; 122 lakh spawn are supplied to other Fish Rearing Farms at Tudalaga, Bisra and Bonai; and the rest 93 lakh spawn are supplied to neighbouring districts like Jharsuguda and to private entrepreneurs. There is a proposal to replace

20 percent of the existing brood stock with fresh ones and add more exotic carp, i.e., Grass Carp, Common Carp and Silver Carp breeders in the squad to meet the target with quality spawn.

Annual requirement of fingerlings and yearlings to culture 2,900 ha water spread area is 145 lakh. For each ha of water spread area, 5000 stockings are needed. Further fingerling requirement for reservoir stocking has been worked out as 85 lakh or 170 lakh standard fry. Therefore, total requirement of fingerlings is 230 lakh or 460 lakh standard fry. Table 2.44 provides the capacity of different fish farms to produce spawn, fry and fingerlings for the year 2011-12.

Table 2.44: Production Capacity of different Departmental Fish Farmers in Sundargarh District: 2011-12

Fish Farm	Gross Area	Water Area	Nursery Tanks	Rearing Tanks	Spawn Production Capacity	Fry Production Capacity	Fingerling Production Capacity
Sadar	11.93	5.27	2.1	-	300.0	25.0	12.5
Tudalaga	5.39	1.69	1.0	0.6	-	20.0	10.0
Bisra	4.44	0.75	0.6	0.7	-	10.0	5.0
Bonai	5.50	2.51	1.0	-	-	10.0	5.0
Sundargarh	27.26	10.22	4.7	1.3	300.0	65.0	32.5

Source: District Fisheries Officer, Sundargarh, 2012.

Seed Production Plan

Total fingerling requirement of the district is estimated to be about 230 lakh, out of which 145 lakh fingerlings are needed for tanks / katas / MIPs and 85 lakh are required for reservoirs. The break-up of supply of fingerlings is as follows: (i) 32.5 lakh from departmental farms, (ii) 107.5 lakh from private hatcheries, (iii) 70 lakh from OPDC hatcheries and (iv) 20 lakh from other captive nurseries.

The major challenge to promote fisheries sector in a big way is the shortage of quality breeding stock. The availability of

fingerlings and yearlings limits the growth of the sector. The State has been striving to take several remedial and promotional measures.

2.6.5 Forests

Forestry sector is also an important sector on which local people, particularly tribal groups and forest dwellers, depend for augmenting their incomes and meeting other needs. Sundargarh has good forest cover and rich biodiversity of flora and fauna. Most common species include *Sal*, *Assan* and *Kurum*, *Sahaj*, *Dhaura*, *Kendu*, *Sisoo*, *Harida*, *Mahua*, *Char*, *Rohan*, *Teak*, *Khair* and *Chantoo*⁵. Forests of Sundargarh are a major source of

⁵The words in italics are local names of common species found in Sundargarh forests.

timber, fuel, non-timber forest produces (NTFP), medicinal plants and others. NTFP include *Kendu* leaves, bamboo, lac, *char*, broom-grass, *mahua* flowers and seeds and sal seeds. Tribals and other forest dwellers depend on forests for their multiple requirements such as timber for construction of houses, fuel wood, NTFP and other needs. The forestry sector contributes about 3 percent to Gross District Domestic Product (GDDP) in Sundargarh district. It has, however, been ascertained that actual

contribution of forests to the district economy is far greater than direct incomes that people derive from forests and than that is captured under GDDP.

Distribution of forest area by blocks is presented in Table 2.45. It may be observed from Table 2.45 that forest area increased only in four blocks namely Tangarpalli, Rajgangpur, Lephripada and Sundargarh between 1998-99 and 2008-09. There is a decrease of forest area in the remaining blocks between 1998-99 and 2008-09.

Table 2.45: Distribution of Forest Area by Blocks in Sundargarh District: 1998-2009

S. No.	Name of Block	Geographical Area (sq.km)	Forest Area (ha)		
			1998-99	2006-07	2008-09
1	Balisankara	443.39	7,985	7,345	7,166
2	Bargaon	354.16	12,063	7,099	11,647
3	Bisra	175.84	1,820	1,860	1,533
4	Bonaigarh	338.58	14,709	6,577	8,707
5	Gurundia	588.21	21,547	25,678	21,016
6	Hemgiri	548.36	27,557	23,534	24,155
7	Koida	649.12	19,221	16,078	17,477
8	Kuanarmunda	507.72	9,358	13,055	6,721
9	Kutra	316.15	1,434	4,763	1,023
10	Lahunipada	701.38	11,125	11,523	9,861
11	Lathikata	307.45	7,145	6,717	6,043
12	Lephripada	409.36	10,455	9,824	13,393
13	Nuagaon	392.41	2,965	3,036	2,679
14	Rajgangpur	380.85	6,477	8,945	8,490
15	Subdega	351.16	6,903	7,527	5,457
16	Sundargarh	359.32	7,909	9,358	8,404
17	Tangarpalli	254.82	2,624	2,899	4,723

Source: Directorate of Economics and Statistics, Odisha

People's Involvement in Forest Protection and Conservation

With a view to involving people in forest protection and conservation and improving livelihoods from the forestry sector, the State Government has taken a number of policy measures to facilitate the involvement of people in forest protection and conservation. The Joint Forest Management (JFM) programme under which local communities are involved in forest protection and conservation was launched in the year 1988. Under this programme, a large number of

Vana Samrakshyana Samitis (VSS) have been constituted in the district. The State Forest Policy allows increased benefits including several usufruct rights from assigned forests to local communities engaged in the JFM Programme. The State enunciated the Minor Forest Policy, 2000 by which the ownership of 72 non-timber forest products was transferred to gram panchayats so that benefits of the specified forest products were available to the local communities. Recently, the State has bestowed profits from the trade of *Kendu* leaves to local communities.

Table 2.47: Distribution of VSS and Assigned Forest Area by Blocks in Sundargarh District

S. No.	Name of Block	VSS (No.)	Assigned Forest Area (ha)	Families by Social Groups			
				SC	ST	Others	Total
1	Balisankara	18	2,486	454	2,619	911	3,984
2	Bargaon	38	4,428	922	7,029	2,807	10,758
3	Bisra	-	-	-	-	-	-
4	Bonaigarh	63	-	-	-	-	-
5	Gurundia	72	-	-	-	-	-
6	Hemgiri	88	13,727	875	3,039	2,362	6,276
7	Koida	27	-	-	-	-	-
8	Kuanarmunda	-	-	-	-	-	-
9	Kutra	10	1,324	194	2,822	168	3,184
10	Lahunipada	56	-	-	-	-	-
11	Lathikata	-	-	-	-	-	-
12	Lephripada	41	4,236	317	2,615	696	3,628
13	Nuagaon	-	-	-	-	-	-
14	Rajgangpur	-	-	-	-	-	-
15	Subdega	24	2,706	194	1,741	472	2,407
16	Sundargarh	20	1,459	319	1,417	643	2,379
17	Tangarpalli	44	4,603	795	2,836	1,485	5,116
Sundargarh District		501	34,969	4,070	24,118	9,544	37,732

Source: DFO Banai, Sundargarh, 2011

Various forest development activities including entry point activities are implemented through VSS. About 501 VSS have been organised and 34,969 ha forest area has been assigned to them for its effective management. It has been estimated that 37,732 families from different social groups (scheduled tribes, scheduled castes and others) in various villages have been involved in forest protection and conservation through VSS. Table 2.46 gives distribution of VSS and Assigned forest area to them by blocks in the district.

Forest Conservation Measures

Mounting pressure on forest resources causes degradation of forests and undermines their productive and ecological roles. Continued degradation of forests also threatens the present and future availability of many forest

plants, wild life, and multiple forest products. This in turns affects households' livelihoods and food security. Forests become an important source of livelihoods for many households in times of distress. Therefore, strong measures are needed to arrest forest degradation and conserve and augment forests. In order to arrest forest degradation, improve forest conservation and increase livelihoods opportunities for local people, the State has implemented a number of programmes including afforestation and natural regeneration programmes in the district. There is, however, need to substantially increase productivity of forest areas and develop agro-forestry models to raise incomes of farmers. The district needs to enrich its forests and their bio-diversity so that forests can serve both environmental and economic needs.

2.6.6 Mining, Small Enterprises and Industries

Sundargarh is rich in mineral resources including iron ore, manganese ore, lead ore, limestone, dolomite and quartz. These resources are mined, processed and some production is exported. Several other valuable minerals like fireclay, coal and bauxite are also found in the district. Manganese is exploited at Gadijore, Dolomite at Panposh and Limestone at Birmitrapur. Such mining activities generate considerable economic value and employment opportunities. About 15,000 persons are directly employed in the mining sector. Table 2.47 summarizes mineral production in Sundargarh district in 2010-11.

Table 2.47: Mineral Production in Sundargarh District: 2010-11

Mineral	Production (Tonnes)
Iron Ore	27,796
Manganese	258
Lime Stone	2,541
Dolomite	1,419
Silica Sand	-
Coal	12,418

Source: Industrial Profile of Sundargarh District, Ministry of MSME, India

Table 2.48: Micro, Small Enterprises and Artisan Units in Sundargarh District: 2010-11

Enterprises by Category	Units (Number)	Investment (Rs. lakh)	Employment (Number)
Agro based and Soda Water	1,703	3,499.26	6,486
Textile based	368	464.79	1,908
Wood based Furniture/Forest based	289	276.16	1,876
Paper and Paper Products	284	1,016.89	1,766
Leather Based	46	55.97	238
Chemical / Chemical Based	279	2,344.62	2,964
Rubber, Plastic and Petro based	213	2,819.41	1,583
Mineral Based Units	642	7,798.45	17,705
Engineering / Metal based (Steel Fab.)	2,241	25,426.47	27,304
Electrical Machinery, Transport Equipment and Electronics	168	437.26	1,111
Repairing and Services	4,191	7,333.7	13,368
Others	747	1,991.34	4,920
Sundargarh District	11,171	53,464.32	81,229

Source: Industrial Profile of Sundargarh District, Ministry of MSME, India, 2010-11

The Medium, Small and Micro Enterprises (MSME) sector in the district has grown over the years. There were only 425 MSME units in 2000-01 in the district. The number of MSME units increased to 755 in 2001-02, 1,180 in 2002-03, 1,635 in 2003-04 and 2,117 in 2004-05. Sundargarh reported 11,171 micro, small enterprises and artisan units in 2011-12. Total investment was reported to be Rs.53,464.32 lakh in 2010-11. These units

employed 81,229 persons in 2010-11. The MSME sector has played an important role in economic development of the district. Main SSI units include agro-based food industries, cottage industries such as *Khadi*, handloom, sericulture, handicrafts and village industries and several other enterprises. Table 2.48 summarises MSME units by categories in Sundargarh District in 2010-11.

Table 2.49: Status of Industrial Units by Categories in Sundargarh District: 2013

Industrial Units by Categories	Quantity / Value
Registered Industrial Units (Number)	4,182
Total MSME Units (Number)	11,171
Registered Medium and Large Unit (Number)	75
Daily worker employed in Small Scale Industries (Number)	81,229
Employment in large and medium industries (Number)	49,558
Major Industrial Areas (Number)	6
Investment of Small Scale Industries (Rs. crore)	534.64
Investment of medium and large scale industries (Rs. crore)	10,837.38

Source: Industrial Profile of Sundargarh District, Ministry of MSME, India. 2013

The district also has large scale industries. Rourkela Steel Plant is one of the oldest large scale industry in the district as well as in the State. Other large scale industries have also been established in due course. The number of such industries increased from 55 to 83 in 2003-04. In recent years, the number of large units has been reported to be 75. Most of the units are mineral based. Rourkela, Kalunga, Mandiakudar, Rajgangpur and Sundargarh are major industrial areas in the district. Table 2.49 summarises the status of industries / MSM enterprises in the district in 2013. It may be observed from Table 2.49 that the industrial sector has a total investment of Rs.11,372.02 crore and employs 130,787 persons in MSME and large industrial units. The number of registered units was 4,182 and MSME units were 11,171.

2.7 Migration and MGNREGS

Migration is a legitimate and important livelihood option and has many facets. People migrate to other areas when no work opportunities are available in their own localities. People also migrate to other areas to seek opportunities that are better than those available in their own localities given their skills and competencies. Some migrate for short duration and others for long

duration. Some migrate permanently. Some migrate under distress conditions to seek any work of casual nature. Some seek seasonal employment when no employment is available in their own areas. Under certain circumstances, migration is economically rewarding. In some cases, migration remains stressful and problematic. However, migration is not a common form of livelihood option in Sundargarh as compared to several other districts of the State such as Balangir and Nuapada.

The State Government has implemented a number of livelihood programmes, particularly for people who face stressful situations when migrating and also for reducing migration to other place for seeking casual work. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is one such right based option, has legal sanction and has been implemented in Sundargarh and other districts of the State. The scheme has positively impacted in reducing distress migration to other places. Table 2.50 summarises the status of MGNREGS fund allocations to blocks and Gram Panchayats (GP) in Sundargarh district from 2007-08 to 2010-11 as per the scheme guidelines.

Table 2.50: Status of MGNREGS Fund Allocation and Utilisation in Sundargarh: 2007-08 to 2010-11

Year	Block		GP	
	Funds Allocated (Rs. lakh)	Expenditure (percent)	Funds Allocated (Rs. lakh)	Expenditure (percent)
2007-08	1,464.33	98.41	2,200.566	99.73
2008-09	2,935.51	98.72	-	-
2009-10	4,705.12	98.89	524	100
2010-11*	7,838.59	70.07	-	-

Source: DRDA, Sundargarh, 2011 Note: *Total Funds without division in blocks & GP

2.8 Efforts for Financial Inclusion

There are several reasons why people need access to easy and affordable credit. They may do so to meet their urgent investment and consumption needs. Some may need credit to improve their livelihoods. A primary survey was conducted in the district to ascertain the major sectors or needs for which households needed credit. As per the findings of the survey, 42.1 percent households needed credit for their agricultural activities including crop loans. Health needs forced 27.1 percent people to resort to loans. For improving their business / enterprises, 7.6 percent people took loans. Other purposes for which people took credit included education (5.2 percent), food consumption (7.9 percent), housing (4.2 percent), asset creation (0.5 percent) and purchase of livestock (1.2 percent). Sources of credit are discussed in the following subsections.

Growth of the Financial Sector

Financial institutions such commercial banks, regional rural banks (RRB), co-operative

banks and co-operative societies (i.e., LAMPS, sericulture co-operative societies and textile co-operative societies) play an important role in providing people easy access to financial resources and credit for furthering their livelihoods. These financial institutions also offer a number of other services such as deposits of savings and transfer of funds as per need. The spread of financial institutions has considerably increased in recent years. In 1970-71, the district had the presence of only 8 banks with just 12 branches, i.e., State Bank of India (3 branches), Central Bank of India (one branch), United Bank of India (one branch), United Commercial Bank (2 branches), Bank of Baroda (one branch), Bank of India (2 branches), Punjab National Bank (one branch) and Union Bank of India (one branch). At present, there are 17 commercial banks, one RRB, one District Co-operative Bank, 44 PACS and four other institutions with total 202 branches. Table 2.51 gives the distribution of co-operative societies (LAMPS, Sericulture and Textile Co-operatives) by blocks in Sundargarh district.

Table 2.51: Distribution of Different Co-operatives by Blocks in Sundargarh District: 2010-11

SL. No.	Name of Block	LAMPS	Sericulture Co-operatives	Textile Co-operatives
1	Balisankara	2	0	0
2	Bargaon	2	1	1
3	Bisra	0	1	1
4	Bonaigarh	0	2	1
5	Gurundia	0	0	0
6	Hemgiri	3	0	1
7	Koida	0	3	0
8	Kuanarmunda	0	0	0
9	Kutra	3	0	1
10	Lahunipada	0	2	0
11	Lathikata	0	0	0
12	Lephripada	2	0	1
13	Nuagaon	0	0	0
14	Rajgangpur	2	0	0
15	Subdega	4	0	1
16	Sundargarh	3	0	5
17	Tangarpalli	3	0	2
Total		24	9	14

Source: DRCS, Asst. director Textile and Sericulture 2010-11

However, Regional Rural Banks (RRB), which are supposed to meet credit requirements of the rural people, play only a marginal role in extending credit to the local people. It has been ascertained that RRB provided just about 19.38 percent of the set

Table 2.52: Annual Credit Flow by Banking Institutions in Sundargarh: 2008-09 & 2009-10

Banking Institutions by Type	Credit Achievement (percent)	
	2008-09	2009-10
Commercial Banks	166.71	137.49
Regional Rural Banks	63.11	19.38
Cooperative Banks	49.72	160.96
All Financial Institutions	134.10	134.45

Source: Potential Credit Linked Plan, Sundargarh; 2011-12

credit targets in recent years. Co-operative banks, on the other hand, play a much bigger role in this regard. They exceeded their credit targets during 2009-10 though it was below 50 percent of the total district targets. Table 2.52 summarises the status of annual credit flow by financial institutions in the district for the year 2008-09 and 2009-10. It may be observed from Table 2.52 that banking institutions met their credit targets by 134.10 percent in 2008-09 and 134.45 percent in 2009-10. Both co-operative banks and commercial banks exceeded their credits targets in 2009-10 and commercial banks exceeded their targets in 2008-09. However, RRB met just only 63.11 percent of their credit targets in 2008-09 and only 19.38 percent in 2009-10. Co-operative banks did not meet their targets in 2008-09, but extended credit worth 160.96 percent of their annual targets in 2009-10.

Self Help Approach for Financial Inclusion

It may be observed that the reach of banking and other financial institutions in the district is very limited. A large proportion of the district population does not have easy access to formal banking institutions in their neighbourhoods. Some villages are 60-70 km away from a bank branch. Therefore, with a view to increasing penetration of financial services and easy credit to rural areas, National Bank for Agriculture and Rural Development (NABARD) has for some time been promoting semi-formal means for delivery of financial services to rural people. The strategy has been to shift the focus from household financial services, especially credit, to group-based lending. To this effect, the self-help group approach has been adopted all over the country. Many states including Odisha have made significant achievements in this regard. The basic objectives of the self-help group approach are: minimising transaction costs, making credit affordable and reducing risks of defaults. Rural people generally require small amounts of credit at short intervals. This raises the cost of accessing credit from formal financial institutions. The modified approach has attempted to deal with this peculiarity at affordable costs.

Rural households in general and marginalized groups such as women, Scheduled Castes and Scheduled Tribes in particular are organized into Self-Help Groups (SHG). Several State agencies such as District Rural Development Agency (DRDA), Integrated Tribal Development Agencies (ITDA) and Integrated Child Development Scheme (ICDS) have made efforts for organising rural people, particularly women, into self-help groups. Non-state agencies such as Non-Government Organisations (NGO) and Micro Finance Institutions (MFI) also contribute to these efforts. The State Government has also launched the *Mission Shakti* in 2001-02 with a view to empowering women and helping them in accessing easy credit at affordable rates. Table 2.54 provides the status of self-help groups organised through the efforts of both State and non-state agencies in different blocks and ULB Sundargarh district. It may be observed from Table 2.53 that some 17,553 SHG have been formed by various agencies including ICDS, blocks, NGO and others in the district by 2012-13. These groups have 197,312 members. All these groups were credit linked as a part of SHG-bank linkage programme of NABARD.

Table 2.53: Status of Self Help Groups by Agencies & by Block/ULB in Sundargarh

(in Number)

S. No.	Name of Block/ULB	ICDS		Block		NGO		Others		Total	
		SHG	Members	SHG	Members	SHG	Members	SHG	Members	SHG	Members
1	2	3	4	5	6	7	8	9	10	11	12
Block											
1	Sundargarh	755	8,157	77	782	157	1,571	-	-	987	10,495
2	Tangarpallui	770	7,863	4	40	128	1,295	31	315	933	9,513
3	Lephripada	764	9,863	44	666	115	1,719	-	-	923	12,248
4	Hemgiri	844	9,773	40	310	178	1,625	-	-	1,062	11,708
5	Subdega	707	7,695	18	204	52	581	71	817	848	9,297
6	Balisankara	911	9,915	65	674	92	1,147	14	149	1,082	11,885
7	Bargaon	806	8,864	80	812	36	370	69	698	991	10,744
8	Kutra	783	9,196	39	358	55	553	3	30	880	10,137
9	Rajgangpur	910	10,753	20	210	31	326	-	-	961	11,289
10	Kuarmunda	976	11,840	53	520	14	177	17	173	1,060	12,710
11	Nuagaon	938	10,387	14	200	21	260	-	-	973	10,847
12	Bisra	796	8,610	23	259	37	663	-	-	856	9,532
13	Lathikata	925	10,840	88	1,071	60	748	10	336	1,083	12,995
14	Lahunipada	983	10,127	-	-	16	160	-	-	999	10,287
15	Bonai	846	9,109	28	280	-	-	-	-	874	9,389
16	Gurundia	612	5,865	15	128	69	809	-	-	696	6,802
17	Koida	572	5,723	9	95	33	465	-	-	614	6,283
ULB											
1	Sundargarh	-	-	69	690	-	-	-	-	69	690
2	Rajgangpur	-	-	120	1,200	-	-	-	-	120	1,200
3	Rourkela	1,191	15,152	-	-	20	275	-	-	1,211	15,427
4	Birmitrapur	331	3,822	-	-	-	-	-	-	331	3,834
Sundargarh		15,420	173,554	806	8,499	1,114	12,744	215	2,518	17,553	197,312

Source: DSWO, Sundargarh, 2012

Self Help Groups (SHG) of Sundargarh district have also been analysed by social classes and by blocks and urban local bodies. The analysis has been given in Table 2.54. It may be observed from Table 2.53 that of total SHG in the district, 663 SHG were from SC communities and 8,707 SHG were of ST communities. Further, 4,781 SHG were credit linked to micro-finance institutions, 2029 SHG created their own revolving funds with or without the help of financial institutions and 1,046 groups were supported under SGSY. About 1,039 SHG with 11,284 members were trained in various vocational trades so that they may meaningfully engage in some gainful economic activities. It may be worth mentioning that the primary survey in the district indicated that only 38.4

percent household could avail credit from different sources. Though the reach of banking institutions in the district has considerably improved in recent years, such institutions were able to extend credit to just 32.3 percent households. Only 4.2 percent households accessed credit from MFI, their reach being limited in the district. SHG helped accessing credit to 26.6 percent households through bank credit linkage programme. Credit from money lenders was limited to 3.5 percent households while 6.7 percent households accessed credit from local shops. About 23.1 percent households accessed credit from relatives and friends, with or without interest and 3.7 percent households took loans from other sources in shape of cash or kind.

Table 2.54: Status of SHG by Social Classes and by Blocks/ULB in Sundargarh District

(In Number)

SL. No.	Name of Block/ULB	SHG by Social Classes		SHG Credit Linked			SHG Trained in Vocational Trades	
		SC Groups	ST Groups	Micro Finance	Revolving fund	SGSY	Groups	Members
Block								
1	Balisankara	27	614	269	86	22	0	0
2	Bargaon	34	352	252	92	61	30	1,327
3	Bisra	11	346	138	22	79	150	1,560
4	Bonaigarh	58	480	375	187	46	128	1,330
5	Gurundia	14	626	348	293	75	61	676
6	Hemgiri	28	130	78	14	26	0	0
7	Koida	13	450	122	45	27	106	1,040
8	Kuanmunda	16	886	527	323	146	48	452
9	Kutra	62	738	231	78	68	56	650
10	Lahunipada	29	609	405	178	101	70	712
11	Lathikata	25	582	271	188	41	15	205
12	Lefripada	49	222	52	86	33	16	160
13	Nuagaon	8	482	336	71	24	72	1,220
14	Rajgangpur	8	941	570	161	123	147	539
15	Sundega	18	410	278	60	76	7	62
16	Sundargarh	110	319	189	59	46	69	759
17	Tangarpali	60	273	172	49	52	37	310
ULB								
1	Biramitrapur	50	99	97	0	0	4	42
2	Raoukela	43	148	71	37	0	23	240
Sundargarh District		663	8,707	4,781	2,029	1,046	1,039	11,284

Source: DSWO, Sundargarh, 2012



2.9 Food Security

Hunger and malnutrition are important concerns that inform development debate the world over. Dealing with hunger and malnutrition are also the subject matters of the first Millennium Development Goal. Governments of India and Odisha have implemented several policy initiatives and

interventions to ensure food and social security with the aim to reducing poverty, hunger and malnutrition. The objectives of these interventions are to ensure easy availability of food to households at affordable prices. Table 2.55 gives the status of malnourished children in Sundargarh.



Table 2.55: Status of Malnourished Children by Block / ULB in Sundargarh District: 2011
(In Number)

SL. No.	Name of Block /ULB	Malnourished Children	Referred Children		Children Improved			
		Progressive	In Month	Progressive	IV to III	III to II	II to I	to Normal
Block								
1	Balisankra	741	95	312	21	16	180	343
2	Bargaon	76	22	802	1	10	77	42
3	Bisra	180	0	180	0	11	2	1
4	Bonaigarh	280	0	280	0	16	25	28
5	Gurundia	1,013	18	1,013	1	8	12	22
6	Hemgiri	451	0	335	0	18	57	60
7	Koira	1,247	19	813	1	56	65	6
8	Kuarmunda	310	27	360	3	20	122	184
9	Kutra	73	33	1,033	2	10	20	18
10	Lahunipara	1,004	0	1,004	1	36	116	72
11	Lathikata	153	75	1,310	3	18	2	3
12	Lephripara	623	0	623	2	9	55	13
13	Nuagaon	70	14	751	3	21	46	41
14	Rajgangpur	405	3	414	3	20	115	135
15	Subdega	464	23	475	0	10	66	96
16	Sundargarh	297	39	475	1	15	60	20
17	Tangarpali	343	15	313	1	4	10	2
ULB								
1	Rourkela	99	23	651	3	20	80	119
2	Biramitrapur	239	6	239	0	2	28	32
Sundargarh District		8,068	412	11,383	45	320	1,138	1,237

Source: DSWO, Sundargarh, 2011

An analysis of Table 2.55 indicates that total number of malnourished children in the district was reported to be 11,383 in 2011. As a result of food interventions, there were progressive improvements in the conditions of malnourished children. About 1,237 malnourished children were made normal healthy children. The status of another 1,138 malnourished children was improved from category II to I (moderately malnourished) during 2011.

Food Security Measures

The State Government has implemented a number of programmes to improve food and nutritional security of people in the district.

Major food interventions include public distribution system (PDS), Supplementary Nutrition Programme (SNP), Mid Day Meal (MDM), Antodaya Anna Yojana (AAY), Annapurana Yojana and subsidised rice scheme. Some of them are discussed below.

Public Distribution System

It ensures availability of essential commodities like rice, wheat, sugar and kerosene at subsidised rate to identified consumers through a network of outlets or Fair Price Shops (FPS). The district has good network of FPS. This helps people get their earmarked commodities at subsidised rates. Table 2.56 gives the status of active ration cards by blocks / ULB in the district.

Table 2.56: Status of Ration Cards by Block/ULB in Sundargarh District

(Figure in Number)

S.N.	Name of Block/ULB	BPL Cards	AAY Cards	APL Cards	AP Cards
Block					
1	Balisankara	9,952	2,524	5,070	136
2	Bargaon	9,092	2,483	5,243	147
3	Bisra	5,149	1,698	9,546	114
4	Bonaigarh	7,553	2,111	4,913	146
5	Gurundia	10,022	2,754	4,861	185
6	Hemgiri	7,898	2,200	9,586	131
7	Koira	8,433	2,585	5,004	156
8	Kuarmunda	11,639	3,435	5,563	168
9	Kutra	7,427	2,269	7,824	146
10	Lahunipada	10,098	4,729	6,822	208
11	Lathikata	10,033	3,141	12,505	135
12	Lephripara	8,183	2,289	8,095	135
13	Nuagaon	12,139	3,388	6,203	192
14	Rajgangpur	10,141	2,480	8,465	177
15	Subdega	5,682	1,687	6,361	135
16	Sundargarh	7,587	2,076	7,259	135
17	Tangarpali	7,818	2,178	6,035	131
ULB					
1	Biramitrapur	1,377	431	7,643	62
2	Rajgangpur	1,296	348	12,290	81
3	Rourkela	12,259	2,716	66,011	439
4	Sundargarh	1,815	491	7,385	62
Sundargarh District		1,65,593	48,013	2,12,684	3,221

Source: District Civil Supply Office, Sundargarh, 2011

It may be observed from Table 2.56 that the district issued in all 429,511 ration cards to households of different categories. The ration card entitled the concerned households to available different benefits under different schemes as per their entitlements. Of these ration cards, 165,593 cards were allotted to BPL households. Targeted households under Antodaya Anna Yojana (AAY) had 48,013 cards and rest of the cards were provided to households above poverty line (APL).

Antodaya Anna Yojana

This programme targets poorest of the poor and destitute households. Targeted households and individuals are identified by Gram panchyats through Palli Sabhas and Gram Sabhas. As per the sample survey, 9.5

percent of households availed the benefits of the scheme. Targeted beneficiaries received 35 kg rice per month at the rate of Rs. 2 per kg. In the district, around 48,013 households availed benefits of the scheme.

Annapurna Scheme

The Scheme seeks to provide direct nutritional support to socially deprived senior citizens by entitling them 10 kg free rice per month. As per the 2011 status report of the district, there are 3,221 beneficiaries under Annapurna Scheme spread over all blocks and urban areas.

Supplementary Nutrition Programme

This programme targets malnourished children, pregnant women and nursing mothers, who require improved nutrition



because of their special needs. The programme is implemented by the State Women and Child Development Department through Integrated Child Development Projects. Anganwadi Centres (AWC) have been established all over the district to implement this programme at village level so that targeted children and women have easy access to targeted interventions.

ICDS Programme was launched in 1975 in Subdega block of Sundargarh district with 85 AWC. At present, the programme is implemented in all 17 blocks and 4 urban local bodies through 2,922 AWC. As per the February 2011 status report, supplementary feeding has been extended to 212,999 beneficiaries through 3,705 feeding centres. Under the Programme, special nutrition is provided to the needy children and expectant / nursing mothers for 300 days a year as per the prescribed nutritional norms. Under SNP, ready to eat food, called "Orimix", which is composed of wheat, soyabean and sugar in the ratio of 65:15:20 and fortified with vitamins and minerals, is provided to

beneficiaries consisting of pregnant, nursing mothers and children aged 0-6 years. Under the programme, 80 gram of Orimix is provided to a beneficiary for 25 days in a month along with oil. Severely malnourished children, pregnant and nursing mothers are given double ration for meeting the nutritional gap.

Mid-Day Meal Programme

Under this programme, cooked food is provided to students in Classes I-VII from 5,711 primary and upper primary schools. This programme serves two objectives: (i) encouraging more enrolments, and retention, of students in both primary and upper primary schools, and (ii) improving nutritional status of students. It covers 497,425 students including 338,253 students in primary schools and 343,964 students in upper primary schools in the district. This programme also covers the National Child Labour Project (NCLP) schools of the district. Table 2.57 summarises the status of implementation of the programme in the district.

Table 2.57: Status of Implementation of MDM by Blocks / ULB in Sundargarh District
(In Number)

SL. No.	Name of Block/ ULB	Number of Schools	Students Covered Under MDM by Schools		
			Primary	Upper Primary	Total
Block					
1	Badgaon	157	6,218	4,387	10,605
2	Balisankara	189	8,705	4,021	12,726
3	Bisra	121	9,571	4,176	13,747
4	Bonai	127	7,123	3,358	10,481
5	Bonai	674	40,557	13,502	54,059
6	Gurundia	190	8,825	3,260	12,085
7	Hemgiri	184	7,260	4,219	11,479
8	Koida	170	12,110	2,831	14,941
9	Kutra	134	8,043	4,370	12,413
10	Lahunipada	187	12,499	4,053	16,552
11	Lathikata	175	13,356	5,308	18,664
12	Lephripada	165	7,163	4,064	11,227
13	Nuagaon	168	11,982	4,836	16,818
14	Rourkela	658	49,818	20,495	70,313
15	Subdega	128	6,334	3,316	9,650
16	Sundargarh	1,448	70,605	39,902	1,10,507
17	Tangarpalli	130	5,331	3,316	8,647
ULB					
1	Kurmunda	194	14,909	6,175	21,084
2	Rajgangpur	185	14,026	6,674	20,700
3	Sadar	176	7,525	5,535	13,060
4	Rourkela	151	16,293	11,374	27,667
Sundargarh District		5,711	338,253	343,964	497,425

Source: DI of Schools, Sundargarh, 2012

Subsidised Rice

With a view to improving food security of the people of Odisha, the State Government launched a new initiative in 2008-09. All households of the KBK region and Sundargarh district and all BPL households of other districts of the State were provided supply of rice to the extent of 25 kg per household per month with a highly subsidised rate of Rs.2 per kg. In 2013-14, the subsidised rate of rice was further modified to Re. one per kg to the extent of entitlements of targeted households.

Social Security Programmes

Both Government of India and the State Government have extended several social security benefits to targeted persons, particularly those of old age, widows and destitute. These programmes include Indira Gandhi National Old Age Pension (IGNOAP), Indira Gandhi National Widowhood Pension (IGNWP), Indira Gandhi National Disability Pension (IGNDP) and Madhu Babu Pension Yojana (MBPY). Table 2.58 summarises the

coverage of social security benefit schemes by blocks and ULB in Sundargarh district. It may be observed from Table 2.58 that there are 144,957 beneficiaries, which have been covered under different social security schemes. IGNOAP benefits 68,001 old persons. The State funded MBPY provides benefits to 64,452 beneficiaries. IGWNP covers 9,274 old widows and IGNDP benefits 3,230 old disabled persons.

Table 2.58: Coverage of Social Security Benefit Schemes by Blocks/ULBs in Sundargarh District: 2012

SL. No.	Name of Block/ULB	MBPY	IGNOAP	IGNWP	IGNDP
Block					
1	Balisankara	2,767	3,484	389	280
2	Bargaon	3,086	3,052	328	247
3	Bisra	2,027	3,092	389	54
4	Bonai	2,866	2,648	317	308
5	Gurundia	2,811	2,031	293	47
6	Hemgir	3,097	3,262	383	344
7	Koira	2,139	2,715	363	46
8	Kuarmunda	3,243	3,983	442	258
9	Kutra	2,088	3,127	360	241
10	Lahunipara	3,199	3,475	431	52
11	Lathikata	4,366	5,254	622	38
12	Lefripada	2,930	3,206	363	52
13	Nuagaon	4,581	4,292	463	160
14	Rajgangpur	2,895	4,206	459	158
15	Subdega	1,809	2,485	291	182
16	Sundargarh	2,070	2,946	323	258
17	Tangarpali	2,456	2,710	295	28
ULB					
1	Biramitrapur	745	1,011	135	16
2	Rajgangpur	1,074	691	221	14
3	Rourkela	12,938	9,603	2,212	415
4	Sundargarh	1,265	728	195	32
Sundargarh District		64,452	68,001	9,274	3,230

Source: DSWO, Sundargarh, 2012-13

Note : MBPY – Madhubabu Pension Yojana, IGNOAP – Indira Gandhi National Old Age Pension
IGNWP – Indira Gandhi National Widowhood Pension, IGNDP – Indira Gandhi National Disability Pension

Summary

Sundargarh contributes about eight percent of the Gross State Domestic Product of Odisha. This is more than double of the average district share of 3.33 percent to GSDP. The real per capita income of the district was reported to be Rs.36,128 in 2008-09 at 2004-05 prices. The number of total workers in the district was 873,227 in 2011, male and female workers being 584,687 and 288,540 respectively. About 40 percent population of the district was reported as working population. Of the total workers, main workers constituted 79.59 percent and marginal workers 20.41 percent. The work participation rates in the district varied from 38.99 percent in 1981 to 41.71 percent in 2011. The male work participation rate was of the order of 55.1 percent and that for female workers was 28.0 percent. Rural work participation rate was higher than urban work participation rate. The work participation rate also varied in different blocks and urban areas. Per worker real Gross District Domestic Product varied from Rs.77,197.90 in 2004-05 to Rs.119,409.21 in 2009-10. Distribution of household incomes and assets is, however, highly unequal in the district.

District poverty measures are not reported by Planning Commission on the basis of National Sample Survey (NSS) data. If the poverty estimates reported for the northern NSS region of Odisha, which includes Sundargarh district are taken as proxy for Sundargarh district, some inferences can be drawn as regards incidence of poverty in the district. The rural poverty estimates based on Tendulkar Methodology for the northern NSS region were reported 70.50 percent in 2004-05 and 39.97 percent in 2011-12. There was significant reduction in rural poverty by 30.53 percentage points between 2004-05 and 2011-12. This region reported highest poverty reduction among all NSS regions of the State. Further analysis has indicated that poverty reduction was also significant for ST and SC social classes, which reported higher incidence of poverty among all social classes.

Agriculture, animal husbandry, fisheries and collection of non-timber forest products are important sources of livelihoods in the district. These sectors contribute about 16 percent share to the district economy. Mining, small business and other enterprises and industry also play significant role in the district economy and for providing livelihoods to the local people. The contribution of these sectors to the district economy is of the order of 38 percent. Service Sector contributes the rest, 47 percent share to the district economy. The average operational holding among farm households is 1.32 ha in the district. A majority (52.44 percent) of farmers is marginal farmers with average operational holding of 0.59 ha. The distribution of operational holdings in the district is grossly unequal. The net area sown was 289,000 ha in 2010-11. The cropping intensity is about 130 percent. Paddy productivity of 17.94 quintals per ha in the district was higher than that in the State in 2011-12. Several initiatives have been taken by the State Government to promote agriculture, horticulture, animal husbandry and fisheries sectors and to raise productivities and production. Irrigation facilities have been significantly improved from 19.24 percent of the total net sown area in 1998-99 to 32.22 percent in 2008-09. Involvement of the local people, particularly those who significantly depend on forests for augmenting their incomes, in forest management and conservation has been encouraged through *Vana Samarakhshan Samittees*.

Mining, small enterprises and industry has also significantly contributed to the district economy and livelihoods of local people. In 2010-11, 84 mines were in operation in Sundargarh district with an area of 17,986 ha. About 44,432 TMT minerals valued at Rs. 7,553.35 Crore were explained in 2010-11 and 12,479 workers were employed. Total industrial units are 11,171 and registered industrial units are 4,182. Total investment in small scale units is of the order of Rs.534.64 crore and in medium and large industrial units Rs.10,837.38 crore. The sector employs

49,558 workers and daily workers employed in small scale units are of the order of 81,000. The State has also been striving to promote financial inclusion so that people have easy access to affordable credit and other financial services. Mission Shakti which operates through Self Help Groups is a main vehicle for women empowerment and financial inclusion.

The State has also taken several initiatives to improve food and nutritional security of the people in the district. Major food interventions include Public Distribution System (PDS), Supplementary Nutrition Programme (SNP), Mid Day Meal (MDM), *Antodaya Anna Yojana* (AAY), *Annapurana Yojana* and subsidised rice scheme. Some 429,511 households are entitled to

concessional food and other items under PDS. SNP is directed at young children, infants and pregnant and lactating mothers. MDM focuses on students in primary and upper primary schools. AAY and *Annapurana Yojana* cater to the needs of poorest of the poor and old and infirm persons. Subsidised rice to the extent of 25 kg per household is provided to BPL households at the rate of Re.one per kg. Several social security benefits are extended to targeted persons, particularly old, widows, disabled and destitute persons. These programmes include Indira Gandhi National Old Age Pension (IGNOAP), Indira Gandhi National Widowhood Pension (IGNWP), Indira Gandhi National Disability Pension (IGNDP) and Madhu Babu Pension Yojana (MBPY).







CHAPTER 3

Health

“To keep the body in good health is a duty, for otherwise we shall not be able to trim the lamp of wisdom, and keep our mind strong and clear. Water surrounds the lotus flower, but does not wet its petals. ”

-Buddha

Health

3.1 Introduction

Health is an important parameter of human development. A healthy household may significantly contribute to economic prosperity and lead a happy life. Health includes physical, mental and social well-being and not merely the absence of disease or infirmity (World Health Organisation). Three Millennium Development Goals

(MDG), i.e., MDG 4, 5 and 6 focus on key health issues. The MDG 4 looks at reducing child mortality, i.e., reducing Under-Five Mortality Rate (U5MR), Infant Mortality Rate (IMR) and immunising children against diseases. The MDG 5 focuses at maternal health and aims at reducing Maternal Mortality Ratio (MMR) and accessing reproductive healthcare. MDG 6 deals with

Box 3.1 Millennium Development Goals 4, 5 and 6

MDG 4: Reduce child mortality

Target: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

- Under-five mortality rate
- Infant mortality rate
- Proportion of one year old children immunised against measles

MDG 5: Improve maternal health

Target: Reduce by three quarters between 1990 and 2015, the maternal mortality ratio

- Maternal mortality ratio
- Proportion of births attended by skilled health personnel

MDG 6: Combat HIV/AIDS, Malaria and other Diseases

Target 1: Have halted by 2015 and begun to reverse the spread of HIV/AIDS

- HIV prevalence among population aged 15-24 years
- Condom use rate of the contraceptive prevalence rate (condom use to overall contraceptive use among currently married women, 15-49 years, percent)
 - Condom use at last high-risk sex (Condom use among non-regular sex partners 15-24 years)
 - Percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS

Target 2: Have halted by 2015 and begun to reverse the incidence to malaria and other major diseases

- Prevalence and death rates associated with Malaria
- Proportion of population in malaria risk areas using effective malaria prevention and treatment measures (Percentage of population covered under use of residuary spray in high risk areas)
- Prevalence and death rates associated with Tuberculosis
- Proportion of Tuberculosis cases detected and cured under DOTS

HIV/AIDS, malaria, and other major killer diseases. Box 3.1 summarises relevant targets and indicators of MDG 4, 5 and 6.

Both Government of India and the State Government have been striving to improve the health of all concerned. A number of schemes have been implemented to improve health status of the people. In line with MDG targets, the achievements of the district are encouraging as regards several health indicators. Comparing to the State indicators, the achievements of the district are relatively better in case of infant mortality, neo-natal mortality and under-five mortality. Maternal mortality of the district is also relatively less than that of the State but still remains high and a matter of concern.

Odisha has been implementing National Rural Health Mission (NRHM) for achieving the goals and objectives of National Population Policy (NPP) and the objectives of Millennium Development Goals. NRHM aims to improve access to, and quality of, healthcare services to the people. There is special focus on high burden districts. Decentralisation, responsiveness to local needs, paradigm shift in healthcare system management, availability of untied funds, responsive institutional framework, measures for infrastructure improvement, allocation of additional human resources and improved quality of healthcare services has improved the facilities and their credibility among members of the public. The performance of *Janani Suraksha Yojana* (JSY), community mobilisation by Accredited Social Health Activists (ASHA), improved referral transport, increased number of institutional deliveries, Out-Patient Department (OPD) and bed occupancy have significantly improved. Integrated Disease Surveillance Project (IDSP) has been beneficial to track the outbreak of diseases in different parts of the State.

This chapter examines health status of the people in the district, various measures taken by the Government to improve the health conditions and efforts made to address key health concerns in Sundargarh district. It

also includes health infrastructural facilities, status of maternal and child healthcare, immunisation coverage, family planning coverage, and drinking water facility. Key health indicators have also been discussed.

3.2 Historical Background

The healthcare system in the district was highly unorganised and dependent upon traditional and cultural belief systems. The tribals, who formed the majority of the district population, had little knowledge on the modern healthcare practices. Their knowledge on healthcare was, and in some cases still is, inextricably linked to their religious faiths and belief systems. Illness and natural calamities was, and in some parts still is, attributed to the wrath of gods. Various religious methods were followed for propitiating offended deities and practices like animal sacrifices were also followed. The local village priest played a crucial role in this regard. The belief of witchcraft was common not only among the tribals, but also in other communities. *Ayurvedic* system of medicine was also in use in some parts by the people through local *Vaidyas*, and *Kavirajas*. First *ayurvedic* dispensary was established in the district in 1943-44 by the ex-ruler of Bonai. This was also the first public health institution in the district.

Increasing influence of modern medical system began in the district in the early part of the 20th century. Use of allopathic medicines and surgical operations started in the district during this period. One allopathic hospital and a dispensary, with in-door and out-door facilities were established in both the ex-States of Gangpur and Bonai. Subsequently, two more dispensaries were established at Koira and Panposh. The hospitals and dispensaries were provided with medicines and surgical instruments. Special efforts were made to popularise vaccination, in both paid and unpaid modes. Births and deaths were not registered in the pre-merger period. The rulers of both the ex-States, Bonai and Gangpur, collected relevant information through the police department since 1924-25. The village *Chowkidar* was the primary

reporting person and information was compiled at the State level. Four year after the merger of the ex-States, i.e., in 1952, the Bengal Birth and Death Registration Act, 1873 was enforced in the district. However, this system did not work well and there were frequent breakdowns. There was also no mechanism to cross check the veracity of information provided by village *Chowkidars*. Therefore, the health related information for the district was unreliable and far from satisfactory.

3.3 Health Infrastructure in Sundargarh

At the time of merger, Gangpur had seven hospitals located at Sundargarh, Bargaon, Raghunathpali, Kuarmunda, Bisra, Hemgir and Rajgangpur and a dispensary at Hatibari. The Roman Catholic Mission also maintained

three small hospitals. Bisra Stone Lime Company had one hospital and a small dispensary in its mining area in Biramitrapur. In the ex-State of Bonai, there were one hospital at Bonaigarh, two dispensaries at Koira and Banki, and an *ayurvedic* dispensary at Sarsara.

After the merger of both the ex-States, steps were taken to establish new healthcare institutions to meet the growing needs of the people. By mid-1970s, the district had 15 hospitals of which eight were meant for general public and the rest for departmental people. Total bed strength was 276 with 33 doctors and 27 paramedics. Table 3.1 summarises the distribution of public health institutions by blocks and urban local bodies in the district.

Table 3.1: Distribution of Public Health Institutions in Sundargarh District, 2011

S. No.	Block/ULB	DHH	SDH	Area Hospital	CHC	UGPHC	PHC-N
Block							
1	Balisankara	-	-	-	1	-	4
2	Bargaon	-	-	-	1	-	3
3	Bisra	-	-	-	1	-	2
4	Bonaigarh	-	1	-	1	-	2
5	Gurundia	-	-	-	1	-	4
6	Hemgiri	-	-	1	-	1	4
7	Koida	-	-	-	1	-	3
8	Kuanarmunda	-	-	-	1	-	3
9	Kutra	-	-	-	1	-	3
10	Lahunipada	-	-	-	1	-	3
11	Lathikata	-	-	-	1	-	5
12	Lephrpada	-	-	-	1	-	6
13	Nuagaon	-	-	1	1	-	3
14	Rajgangpur	-	-	-	1	-	2
15	Subdega	-	-	-	-	1	2
16	Sundargarh	-	-	-	1	-	3
17	Tangarpalli	-	-	-	1	-	4
ULB							
1	Biramitrapur	-	-	1	-	-	-
2	Rajgangpur	-	-	1	-	-	-
3	Rourkela	1	1	-	-	-	-
4	Sundargarh	1	-	-	-	-	-
Sundargarh District		2	2	4	15	2	56

Source: CDMO, Sundargarh, 2011.

Notes: DHH: District Headquarters Hospital; SDH: Sub-Divisional Hospital; CHC: Community Health Centre; UGPHC: Up-Graded Primary Health Centre; PHC-N: Primary Health Centre-New.

It may be observed from Table 3.1 that the district had 81 public health institutions in the district by 2011. This includes two district headquarter hospitals, two sub-divisional hospitals, four area hospitals, 15 Community Health Centre (CHC), two Up-Graded Primary Health Centres (UGPHC) and 56 Primary Health Centre-New (PHC-N). District also has 14 Mobile Health Units (MHU) to cater to the needs of those areas in which doctors and paramedical staff are not

available. In addition, there are 380 Health Sub-Centres (HSC) which function in the district as in March 2013. About 383 Auxiliary Nurse Midwife (ANM) manage 380 functional health sub-centres in Sundargarh district. The district has only 239 health sub-centre buildings. Table 3.2 summaries the number of health sub-centres, presence of ANM and infrastructure in Sundargarh district.

Table 3.2: Distribution of Health Sub-Centres and ANM by Blocks in Sundargarh, 2013

SN	Name of Block	HSC	HSC having ANM	HSC with Own Building	HSC Building
1	Balisankara	28	28	22	21.4
2	Bargaon	17	17	10	41.2
3	Bisra	23	20	15	34.8
4	Bonaigarh	19	19	6	68.4
5	Gurundia	19	18	9	52.6
6	Hemgiri	19	20	18	5.3
7	Koida	24	23	16	33.3
8	Kuanarmunda	27	28	8	70.4
9	Kutra	12	13	8	33.3
10	Lahunipada	27	27	11	59.3
11	Lathikata	33	33	13	60.6
12	Lephrpada	24	22	24	0.0
13	Nuagaon	27	33	23	14.8
14	Rajgangpur	26	26	10	61.5
15	Subdega	20	21	20	0.0
16	Sundargarh	18	18	15	16.7
17	Tangarpalli	17	17	11	35.3
Total		380	383	239	37.1

Source: Block level Health Institutions and CDMO, Sundargarh, 2013

Notes: HSC: Health Sub-Centres; ANM: Auxiliary Nurse Midwife.

Out of 380 health sub-centres, 37.1 percent health sub-centres function without their own buildings. Based on the population and geographical location of villages / Gram Panchayats (GP), the Government has made attempt to localise and provide primary healthcare services through health sub-centres, PHC-N, UGPHC and CHC so that it can improve people's accessibility healthcare services. A typical primary health centre covers a population of 20,000 in hilly / tribal / difficult areas and 30,000 population in

plain areas as per the guidelines of Indian Public Health Standards. As Sundargarh district is predominately hilly and Scheduled Tribes (ST) dominate district, it is expected that there should be one PHC for 20,000 population. If upgraded PHC are added to the existing PHC (N), the district requires additional six PHC in different blocks. According to the District Level Household Survey-3 (DLHS-3), the average population covered by a health sub-centre in the district is about 3,907, average population covered by

PHC is about 33,963 and average population covered by CHC is around 95,841.

3.4 Health Personnel and Patient Load

There are 220 sanctioned posts of doctors in the district. Out of 220 sanctioned posts, 149 doctors are in position and the rest 71 posts of doctors are vacant as may be seen from Table 3.3. It is mostly the health institutions at the periphery or in interior pockets, where the posts of doctors remain vacant. There is an acute shortage of doctors. The posts of

specialists remain vacant even in the district or sub-divisional hospitals. Non-availability of required doctors in these public health institutions affects the availability and quality of healthcare services. Even private healthcare services are not available everywhere. As a result, the patient load increases significantly in the public health institutions. Table 3.3 summarise positions of doctors and their vacancies in different public health institutions in the district.

Table 3.3: Sanctioned Posts, Strength and Vacancies of Doctors in Sundargarh, 2011-12

SL. No.	Name of Block	Name of the Public Health Institution	Positions of Doctors (Number)		
			Sanctioned	Present	Vacancies
1	Balisankara	Kinjhirkela CHC and 4 PHC(N)	7	6	1
2	Bargaon	Bargaon CHC and 3 PHC(N)	8	5	3
3	Bargaon	Ekma PHC	1	1	0
4	Bisra	Bisra CHC and 2 PHC(N)	8	7	1
5	Bonaigarh	S. Bolang PHC and 2 PHC(N)	5	3	2
6	Bonaigarh	Bonai SDH	13	5	8
7	Gurundia	Gurundia PHC and 4 PHC(N)	7	4	3
8	Hemgiri	Hemgiri UPHC and 4 PHC(N)	11	7	4
9	Hemgiri	Bileimunda Area Hospital	1	1	0
10	Koira	Koira CHC and 3 PHC(N)	7	6	1
11	Kuanrmunda	Kuanrmunda CHC and 3 PHC(N)	6	5	1
12	Kuanrmunda	Biramitrapur Area Hospital	3	2	1
13	Kutra	Kutra CHC and 3 PHC(N)	7	5	2
14	Lahunipara	Lahunipara CHC and 3 PHC(N)	7	7	0
15	Lathikata	Birkera PHC and 5 PHC(N)	8	7	1
16	Lephripara	Sargipali CHC and 6 PHC(N)	10	7	3
17	Nuagaon	Hatibari PHC and 3 PHC(N)	5	3	2
18	Nuagaon	Sorda Area Hospital	1	1	0
19	Panposh	Panposh SDH	5	5	0
20	Rajgangpur	Laing PHC and 2 PHC(N)	7	6	1
21	Rajgangpur	Rajgangpur Area Hospital	7	6	1
22	Subdega	Subdega UPHC and 2 PHC(N)	7	5	2
23	Sundargarh	Majhapara CHC and 3 PHC(N)	7	6	1
24	Sundargarh	Sundargarh DHH	65	36	29
25	Tangarpali	Mangaspur CHC and 4 PHC(N)	7	3	4
Sundargarh District			220	149	71

Source: CDMO, Sundargarh, 2011.

Notes: PHC (N): Primary Health Centre (New); CHC: Community Health Centre; SDH: Sub-Divisional Hospital; DHH: District Headquarters Hospital; UPHC: Upgraded Primary Health Centre.

On an average, there is one doctor for every 9,458 persons in the district. Female doctors generally are in severe short supply. In the absence of female doctors, rural and tribal women usually remain reluctant to share various details of their ailments with male doctors. This constraints their access to public healthcare services. In order to improve the community health status, the Government has introduced the concept of ASHA, who can guide people on health related issues at village / community level. ASHA has been entrusted with multiple responsibilities including escorting pregnant

women to nearest health institutions for periodical check-ups, and promoting safe institutional deliveries, administering rapid diagnostic tests for detecting malaria, and other specified diseases, assisting Tuberculosis (TB) patients to undergo Directly Observed Treatment (DOTS) treatments, promoting family planning measures and accelerating the pace of implementation of reproductive and child health programmes. In Sundargarh district, there are 739 beds in position in different public health institutions as indicated in Table 3.4. There is on an average one bed for 2,816 persons.

Table 3.4: Distribution of Beds by Health Institutions in Sundargarh, 2011

S. No.	Health Institution by Location	Beds (Number)
District Headquarters Hospitals		
1	Rourkela	128
2	Sundargarh	197
Sub-Divisional Hospitals		
1	Bonaigarh	56
2	Panposh	16
Area Hospitals		
1	Hemgir	8
2	Kuarmunda	16
3	Nuagaon	6
4	Rajgangpur	42
Community Health Centres		
1	Balisankara	16
2	Bargaon	30
3	Bisra	16
4	Hemgir	30
5	Koira	16
6	Kuarmunda	16
7	Kutra	16
8	Lahunipara	16
9	Lephripa	16
10	Subdega	30
11	Sundargarh	16
12	Tangarpali	16
Primary Health Centres (N)		
1	Bargaon	6
2	Bonaigarh	6
3	Gurundia	6
4	Lathikata	6
5	Nuagaon	6
6	Rajgangpur	6
Sundargarh District		739

Source: CDMO, Sundargarh, 2011.

Box 3.2 National Rural Health Mission Initiatives

- Sixteen *Janani Sewa* / Express were provided to different block PHC / CHC / DHH
- Village Health and Nutrition Day (VHND) being observed on every Tuesday and Friday in all block PHC / CHC.
- *Prustikar Diwas* is observing on 15th of every month of 18 PHC / CHC, which referred cases from VHND are undergoing treatment. The referred cases such as Grade III and IV, and sick children are provides with free medicine.
- 102 residential schools are provides with untied fund of Rs 10,000/-, which is being utilised towards improvement of health status of children in school, and provide financial support towards medicine and transport of sick children.
- Staff nurses and ANMs are provides with Skill Attendant at Birth (SAB) training to conduct institutional delivery and to reduce maternal mortality ratio and infant mortality rate.
- Block Chairmen of nine blocks have trained on management of RKS fund in PHCs / CHCs.
- AWWs and ANMs have provided with Integrated Management of Neonatal and Childhood Illness (IMNCI) training to reduce infant mortality rate.
- Urban health centres have been operates in Tilak Nagar, Malgodown and Gopabandhu Palli
- Two PHC (N) are managed by the NGOs under Public Private Partnership (PPP) mode, i.e., Jangla PHC (N) and Tangergaon PHC (N)
- 380 HSCs were provided with Untied Fund grant of Rs 10,000/- each.
- Fourteen mobile health unites have been operates in 17 Blocks.
- All Gaon Kalyan Samitis (GKS) are provided with Rs 10,000/- each and the funds are now utilised towards betterment of the villagers on health and sanitation.
- 49 Ayurveda, Unani, Yoga and Naturopathy (AYUSH) doctors have been engaged in different block PHCs / CHCs / PHC (N).

percent children who suffered from acute respiratory infections and fever were given treatment in the two week period, when a survey was mounted to ascertain the prevalence of these ailments. Cholera that used to affect large areas and many persons, and to cause huge mortalities in the past, has been effectively checked owing to preventive measures taken against the epidemic in recent times. Typhoid also receives the attention of local health authorities.

Malaria

Malaria is a major public health problem in Sundargarh and other parts of the State. The State planned to reduce mortality due to malaria by 50 percent by 2010 and to eliminate lymphatic filariasis by 2015. Out of 56

PHC(New), 36 have trained microscopists in the district. About 19 microscopic centres

Table 3.5: Status of Blood Screening and Malaria Occurrence by Regions in Sundargarh: 2004 to 2010

Year	Population	BSC/ BSE	Positive	Pv	Pf	RT done	Death due to CM	ABER (Perce nt)	API (Perce nt)	SPR (Perce nt)	SFR (Perce nt)	Pf (Perce nt)
Rural												
2004	1,322,323	405,028	39,306	2,127	37,279	65,106	17	30.6	29.7	9.7	9.2	94.8
2005	1,378,254	384,440	31,191	1,214	29,977	31,191	14	27.9	22.6	8.1	7.8	96.1
2006	1,406,758	398,199	24,292	849	23,443	24,292	12	28.3	17.3	6.1	5.9	96.5
2007	1,422,084	349,860	18,665	601	18,064	18,665	12	24.6	13.1	5.3	5.2	96.8
2008	1,438,922	318,655	17,990	788	17,202	17,990	22	22.1	12.5	5.6	5.4	95.6
2009	1,460,912	329,356	17,123	692	16,431	17,123	12	22.5	11.7	5.2	5.0	96.0
2010	1,478,688	359,773	14,211	599	13,612	14,211	30	24.3	9.6	3.9	3.8	95.8
Urban												
2004	579,407	75,843	8,190	441	7,749	8,190	0	13.1	14.1	10.8	10.2	94.6
2005	632,171	71,403	8,122	263	7,859	8,122	0	11.3	12.8	11.4	11.0	96.8
2006	630,298	56,536	4,627	171	4,456	4,627	0	9.0	7.3	8.2	7.9	96.3
2007	636,484	46,346	4,475	131	4,344	4,475	0	7.3	7.0	9.7	9.4	97.1
2008	647,670	52,886	4,780	239	4,541	4,780	0	8.2	7.4	9.0	8.6	95.0
2009	739,859	42,292	3,673	215	3,458	3,673	0	5.7	5.0	8.7	8.2	94.1
2010	729,402	37,112	1,873	113	1,760	1,873	9	5.1	2.6	5.0	4.7	94.0
Total												
2004	1,901,730	480,871	47,496	2,568	45,028	73,296	17	25.3	25.0	9.9	9.4	94.8
2005	2,010,425	455,843	39,313	1,477	37,836	39,313	14	22.7	19.6	8.6	8.3	96.2
2006	2,037,056	454,735	28,919	1,020	27,899	28,919	12	22.3	14.2	6.4	6.1	96.5
2007	2,058,568	396,206	23,140	732	22,408	23,140	12	19.2	11.2	5.8	5.7	96.8
2008	2,086,592	371,541	22,770	1,027	21,743	22,770	22	17.8	10.9	6.1	5.9	95.5
2009	2,200,771	371,648	20,796	907	19,889	20,796	12	16.9	9.4	5.6	5.4	95.6
2010	2,208,090	396,885	16,084	712	15,372	16,084	39	18.0	7.3	4.1	3.9	95.6

Source: CDMO, Sundargarh

Notes: ABER-Annual Blood Examination Rate; API-Annual Parasite Index; SPR-Slide Positive Rate; SFR-Slide Falciparum Rate; Pf-Plasmodium falciparum; Pv-Plasmodium Vivax; BSC: Blood Sample Collection; BSE: Blood Sample Examination; RT: Radical Treatment; CM: Cerebral Malaria.

summaries the status of blood screening and occurrence of malaria in Sundargarh district from 2004 to 2011.

Of the total positive slides, Plasmodium Falciparum (Pf) positive was 94.8 percent and Plasmodium Vivax (Pv) positive was 5.41 percent during 2004 and remained at 95.57 percent and 4.43 percent respectively during 2010. It may be observed that there is a positive growth rate in Pf positive slides while Pv positive shows a declining trend. In urban areas, the trend is just opposite, i.e., Pv positive shows an increasing trend from 5.38 percent in 2004 to 6.03 percent in 2010, while Pf positive shows a decreasing trend from 94.62 percent in 2004 to 93.97 percent in 2010. However, in rural areas, Pf positive has gone up from 94.84 percent in 2004 to 95.78 percent in 2010 with decreased Pv positive from 5.41 percent in 2004 to 4.22 percent in 2010. Government has taken several measures to control Malaria in the district. Apart from blood sample collection and

testing, Drug Distribution Centres (DDC) have been established in different parts of the district for distribution of medicines. Different preventive and curative measures taken by the Government is presented in the Table 3.6.

Table 3.6: Achievements of Malaria Interventions in Sundargarh District, 2001 to 2010

Measures to tackle Malaria	2001	2004	2007	2010
Total Blood Slides Examined (Number)	469,652	480,871	396,206	396,885
Total Positive Slides Detected (Number)	68,746	47,496	23,140	16,084
Total Pv Cases (Number)	6,508	2,468	732	712
Total Pf Cases (Number)	62,238	45,028	22,408	15,372
Total RT Done (Number)	68,724	47,496	23,140	16,084
Deaths due to CM (Number)	44	17	12	39
Annual Blood Examination Rate (Percent)	25.6	24.8	19.2	18.0
Annual Parasite Index (Percent)	37.5	24.5	11.2	7.3
Slide Positive Rate (Percent)	14.6	9.8	5.8	4.1
Slide Falciparum Rate (Percent)	13.2	9.3	5.6	3.9
Prevalence of Plasmodium falciparum (Percent)	90.5	94.8	96.8	96
Total DDC Opened (Number)	1,326	1081	1,072	0
Total DDC Functioned (Number)	1,326	1081	1,072	0
Total FTD Opened (Number)	538	283	1,507	2,263
Total FTD Functioned (Number)	538	283	1,507	2,263
Total MLV Functioned (Number)	698	698	0	0

Source: CDMO, Sundargarh, 2011.

Notes: DDC: Drug Distribution Centres; FTD: Fever Treatment Depot; MLV: Malaria Link Volunteers.

Zilla Swasthya Samiti and Rogi Kalyan Samitis

Zilla Swasthya Samiti is a district level society headed by the Zilla Parishad President and supports and directs the implementation of district health programmes. *Rogi Kalyan Samitis* have been formed at district and sub-district levels to facilitate provisioning of quality healthcare with accountability, people's participation and greater transparency in utilization of funds. Several special health programmes have been implemented in the district. Two such programmes are summarised below.

National Leprosy Eradication Programme

The National Leprosy Eradication Programme (NLEP) is under implementation in the district since 1982-83 and aims at eliminating leprosy through multi-drug therapy. Due to successful implementation of this programme, the prevalence rate has been drastically reduced to less than one per 10,000 population in the district. The district leprosy status shows a trend where new cases identified and considered for treatment were higher during 2010-11 (55.56 percent) in comparison to new cases treated during 2005-06 (51.43 percent). The rate of RFT (Released from Treatment) reflects a declining trend with decreased number of total cases (old and

new), i.e., from 70.47 percent during 2005-06 to 64.8 percent during 2010-11. On one hand, total cases reflect a decreasing trend from 877 (2005-06) to 693 (2010-11), on the other hand, the rate of release from treatment has declined. Rajgangpur, Bisra and Hemgiri blocks have shown excellent achievements in treating leprosy.

Revised National Tuberculosis Control Programme

The Revised National Tuberculosis Control Programme (RNTCP) has been implemented in the district to reduce the occurrence of TB patients and provide concentrated solutions to the problem. A national surveillance programme has been mounted to deal with TB cases. Table 3.7 summarises the status of implementation of RNTCP in the district. It may be observed that the number of new patients who seek treatment has been rising over the year. This indicates that awareness among people as regards availability of the healthcare for TB has been rising. The number of sputum tests has also been increasing over the years. The number smear positive patients has also been rising over the years. The cure rate has varied from year to year. This may be due to the fact that some patients might be seeking healthcare at very late stage. Numbers of patients put to DOTS has, however, gone up.

Table 3.7: Status of Implementation of RNTCP in Sundargarh: 2001 to 2010

RNTCP Activities	2001	2004	2007	2010
Total New adult OPD Attendance (Number)	555,617	630,714	723,833	659,058
Total Sputum Examinations (Number)	13,223	10,907	13,102	14,566
Total Sputum Examined (Percent)	2.38	1.73	1.81	2.21
Total Smear Positive Patients (Number)	1,941	1,381	1,771	2,042
Smear Positive patients (Percent)	14.68	12.66	13.52	14.02
Total Patients Put on DOTS (Number)	3,163	3,009	3,243	3,329
Cure Rate (Percent)	91.9	80.0	80.8	86.7
Defaulter Rate (Percent)	2.6	9.2	5.7	5.0
Failure Rate (Percent)	1.6	0.6	1	0.2
Death Rate (Percent)	3.9	4.5	5.2	5.8

Source: District T.B officer, Sundargarh, 2011

HIV/AIDS and National AIDS Control Programme

MDG 6 aims, inter alia, at combating the spread of HIV/AIDS. Prevalence of HIV/AIDS in all districts of Odisha is compared in Annexure 3.1. Sundargarh district has reported higher awareness of women as regards HIV/AIDS and relevant indicators of reproductive health in comparison to the State. As per DLHS-3, about 46.5 percent women in the district were aware of HIV/AIDS and its prevention measures and 35.2 percent knew that the disease gets transmitted from mother to child. These indicators at the State level were only 30.5 percent and 18.4 percent respectively. About 35 percent married women are aware of places for testing HIV/AIDS and 6.5 percent women tested themselves for HIV/AIDS. Male who are aware of sexually transmitted diseases and HIV/AIDS are more than women. About 57.1 percent male and 41.9 percent female are

aware of Reproductive Tract Infection (RTI)/ Sexually Transmitted Infection (STI) in the district.

National AIDS Control Program (NACP) has been implemented in Odisha through Odisha State AIDS Control Society (OSACS), which functions under the Health and Family Welfare Department of Government of Odisha. In 2006, 400 samples were screened in the district. Only one case was detected as HIV/AIDS positive (i.e., 0.25 percent) against 1.29 percent HIV/AIDS positive cases reported in Odisha. In 2008, 13,199 samples were screened in the district and 135 cases were reported positive, which is about 1.02 percent. The corresponding figures for Odisha were reported to be 9,306 positive cases out of total 234,749 screened samples and 3.96 percent respectively. This indicates that the prevalence of HIV infections has gone up in the district as well as State. Table 3.8 analyses the status of HIV/AIDS cases in the district and Odisha for the period 2006 and 2008.

Table 3.8: Status of HIV/AIDS Cases in Sundargarh and Odisha: 2006 to 2008

Indicator	2006		Upto 2008	
	Sundargarh	Odisha	Sundargarh	Odisha
Number of Blood Sample Screened	400	14,700	13,199	2,34,749
Number of Cases Found Positive	1	190	135	9,306
Percentage of Positive Cases	0.25	1.29	1.02	3.96

Source: CDMO, Sundargarh; Odisha State AIDS Control Society, 2006 and 2008.

Table 3.9: Reported Live Births, Infant and Maternal Deaths in Sundargarh: 2001-2010-11

(In Numbers)

Year	Live Births	Infant Deaths	Maternal Deaths
2000-01	33,166	1,623	59
2001-02	35,751	1,395	65
2002-03	32,850	1,405	74
2003-04	33,055	1,264	78
2004-05	31,697	1,124	72
2005-06	32,479	1,095	64
2006-07	34,193	1,119	66
2007-08	38,902	1,048	68
2008-09	36,550	1,070	59
2009-10	31,689	1,010	79
2010-11	31,458	938	75

Source: CDMO, Sundargarh, 2011

3.6 Mortality Conditions

The National Population Policy 2000 aimed at achieving infant mortality rate of 30 per 1,000 live births by 2010. The MDG 4 also aims at reducing infant and child mortality rates by two-thirds between 1990 and 2015. Similarly, the MDG 5 aims at reducing maternal mortality ratio by three fourth between 1990 and 2015. Odisha had very high child mortality rates and maternal mortality ratios as compared to the national level. Sundargarh reported on an average 34,819 births every year from 2000-01 to 2010-11.

Out of these, about 97 percent were live births and three percent still births. Table 3.9 summarises reported live births, infant deaths and maternal deaths from 2000-01 to 2010-11. Chart 3.1 and Table 3.10 summarise the status of different child mortality rates for the period 2010-13. There has been a significant decline in child mortality rates in Sundargarh district as well as the State in recent years. Current focus is on improving maternal nutrition especially during pregnancy and encouraging skilled attendance at birth for reduction of neonatal mortality in the district.

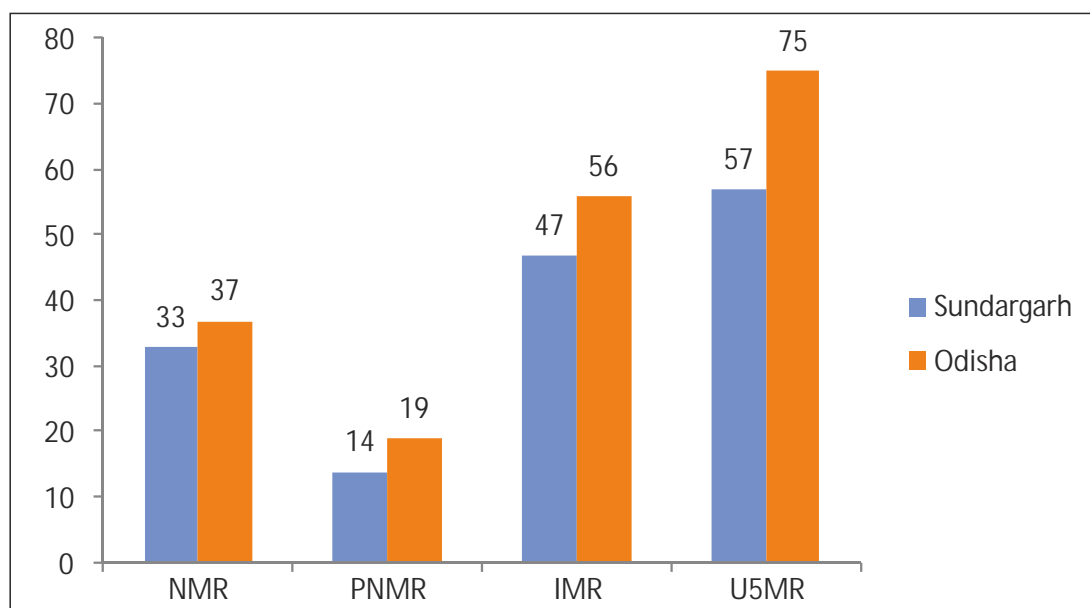
Table 3.10: Status of Child Mortality Rates in Sundargarh District and Odisha, 2010-13

Years	NMR		PNMR		IMR		U5MR	
	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha
AHS-1 (2010-11)								
Total	39	40	16	22	55	62	65	82
Rural	45	42	20	23	65	65	78	87
Urban	23	28	6	16	29	44	33	54
AHS-2 (2011-12)								
Total	34	39	15	21	49	59	58	79
Rural	39	41	18	21	56	62	67	83
Urban	24	26	7	15	31	41	36	52
AHS-3 (2012-13)								
Total	33	37	14	19	47	56	57	75
Rural	38	39	17	20	55	59	67	80
Urban	19	23	7	14	25	37	32	48

Source: AHS-1, 2010-11, Odisha; AHS-2, 2011-12, Odisha; AHS-3, 2012-13, Odisha.

Notes: NMR: Neo-natal Mortality Rate; PNMR: Post Neo-natal Mortality Rate; U5MR: Under-five Mortality Rate. Source: AHS-3, 2012-13, Odisha.

Chart 3.1: Child Mortality in Sundargarh District and Odisha, 2012-13



Source: AHS-3, 2012-13, Odisha.

Notes: NMR: Neo-natal Mortality Rate; PNMR: Post Neo-natal Mortality Rate; U5MR: Under-five Mortality Rate.

Neo-natal, Post-natal and Infant Mortality Rates

Neo-natal Mortality Rate (NMR) is defined as the number of neonates dying before reaching 28 days of age (0-27 days) per 1,000 live births. The first month of life is associated with the highest risk to survival. Neo-natal mortality has been generally associated with the health of the mother and the adequacy of healthcare services available at the time of birth. As may be observed from Table 3.10, NMR was reported 33 deaths per 1,000 live births in 2012-13, implying that about three out of every 100 infant deaths occur during the first month of life. Rural NMR of 38 is little below the State Rural average of 39 deaths per 1,000 births. There are variations in the neonatal mortality rates in rural and urban areas. Major causes are pre-mature births and birth asphyxia.

Post-Neonatal Mortality Rate (PNMR) is expressed as the number of infants dying between 28 and 364 days of age per 1,000 live births. The PNMR is 14 deaths per 1000 live births in the district, whereas the State average is 19 per 1000 live births as may be seen in Table 3.10. The PNMR has improved from 16 per 1,000 in 2010-11 to 14 per 1,000 in 2012-13. PNMR is generally due to infections and undernourishment since birth. Infant mortality rate is the number of deaths of infants between birth and one year of age expressed per 1,000 live births. It may be observed from Table 3.10 that the infant mortality rate has decreased from 55 during

2010-11 to 47 in 2012-13 in Sundargarh district. The female IMR is reported to be 48 as against the male IMR of 46 in the district. In rural areas, the infant mortality rate is 55 as against the urban IMR of 25.

Under-Five Mortality Rate

The Under-Five Mortality Rate (U5MR) is expressed as probability of dying between birth and age five out of 1,000 live births and has been widely used as one the best indicators of socio-economic development and effectiveness of health and welfare programmes. U5MR includes neo-natal, post-natal, infant and child mortality rates. As may be seen from Table 3.10, the U5MR has declined from 65 in 2010-11 to 57 in 2012-13 in the district and similar trends have been observed at the State level. Though considerable success has been achieved in reducing child mortality rates, the goals of the MDG 4 are yet to be achieved and remain a serious concern in the district.

Table 3.11 reports infant deaths by residence and age group in the district. It shows that majority of infant deaths have occurred between one and three months in Sundargarh district. Further analysis of data reported in Table 3.11 indicates that in 2011, 20.6 percent infant deaths were reported between eight to 30 days and 27.6 percent infant deaths between one and three months. It also indicates that about half of total infant deaths occurred between eight days and three months and about 95 percent infant deaths reported within the initial nine months in the district.

Table 3.11: Infant Deaths Registered by Residence and Age in Sundargarh, 2009 to 2011

Age Group	2009			2010			2011		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Below 24 hours	5	13	18	22	12	34	16	14	30
1-7 days	36	54	90	33	58	91	35	84	119
8-30 days	154	69	223	153	73	226	96	99	195
1-3 months	142	97	239	147	100	247	134	127	261
4-6 months	48	66	114	53	64	117	76	96	172
7-9 months	76	42	118	79	50	129	76	62	138
10-12 months	13	15	28	16	15	31	17	15	32
Sundargarh District	474	356	830	503	372	875	450	497	947

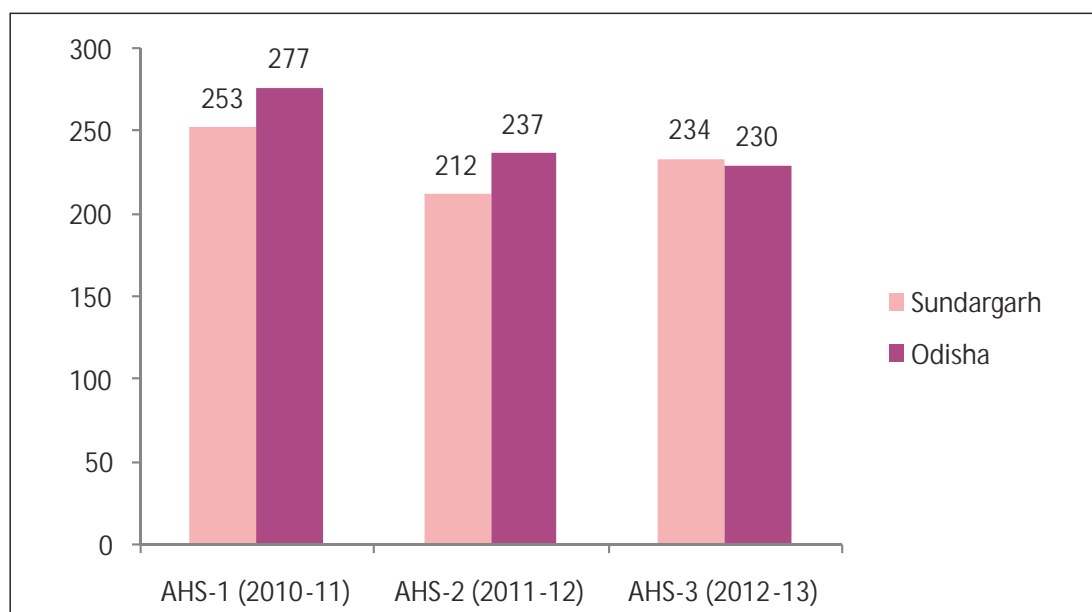
Source: CDMO, Sundargarh, 2011.

Maternal Mortality

Maternal mortality is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. Maternal

Mortality Ratio (MMR) is the number of women who die during pregnancy and childbirth per 100,000 live births during the same period. Chart 3.2 reports the status of maternal mortality ratios for Sundargarh and Odisha from 2010-11 to 2012-13. Inter-district comparison of maternal mortality ratio for Odisha is reported in Annexure 3.2.

Chart 3.2: Maternal Mortality Ratios in Sundargarh District and Odisha, 2010-13



In Sundargarh district, the estimated maternal mortality ratio declined from 253 in 2010-11 to 212 in 2011-12, but increased to 234 in 2012-13. Overall, a declining trend has been observed in MMR in the district and at the State level. It may be observed from Chart 3.2 that maternal deaths as well as MMR have declined for both Sundargarh and Odisha between 2010-11 and 2012-13. A number of factors account for decline in MMR between 2010-11 and 2012-13 at the district and State levels. In addition to improvement in public healthcare systems, increased female literacy, growing awareness and greater access healthcare services have contributed to reducing MMR in the district as well as at the State levels.

3.7 Life Expectancy at Birth

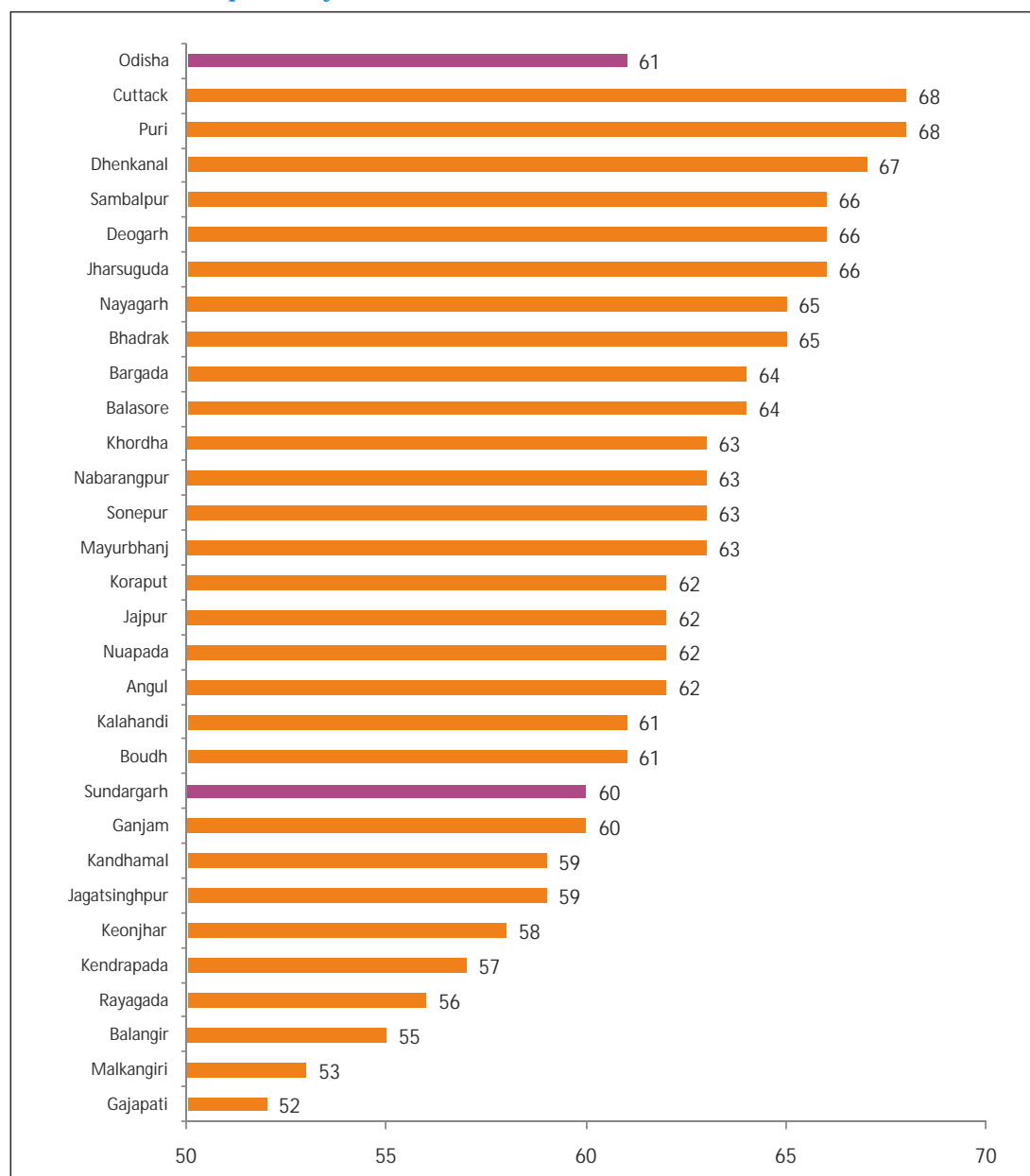
Life Expectancy at Birth (LEB) is referred as the average number of additional years a person could expect to live if current mortality trends were to continue for that

person's life. In Odisha, the life expectancy of females and males at birth during 2001-06 was 60.1 and 59.7 years respectively, which was lower than the national average of 67.0 and 64.0 years for female and male respectively. Chart 3.3 displays life expectancy at birth by districts in Odisha based on data available from DLHS-2. The LEB in Sundargarh district was 60 years, whereas the average for the State was 61 years as may be seen from Chart 3.3. Nine districts reported lower LEB than Sundargarh district and the remaining 20 districts had higher LEB. This indicates that LEB in Sundargarh is generally lower LEB than many other districts.

3.8 Maternal and Child Health

Odisha has been striving to significantly improving maternal and child health indicators, particularly in scheduled districts, through various measures. Reproductive Child Health (RCH) programme aims at

Chart 3.3: Life Expectancy at Birth in Odisha



strengthening maternal and child healthcare with a view to ensuring safe motherhood and greater survival of newborn children and promoting family planning methods and other measures. Several initiatives have been put in place to meet the programme objectives. For example, with a view to improving access to healthcare, an emergency referral transport scheme, “*Janani Express*” has been introduced in selected health institutions. Other initiatives are briefly discussed below.

Antenatal Care

Antenatal care of pregnant women includes

their periodical check-ups, receiving tetanus injection, Iron Folic Acid (IFA) tablets, institutional or assisted deliveries with the help of trained midwives and other measures. Table 3.12 compares the status of antenatal care for Sundargarh and Odisha from 1998-99 to 2011-12. It may be observed that Sundargarh district has reported several positive trends in improving antenatal care. The coverage of antenatal check-ups increased from 88.9 percent in 1998-99 to 97.4 percent in 2011-12. For Odisha, the coverage increased from 72.9 percent in 1998-99 to 97.0 percent in 2011-12.

Table 3.12: Status of Maternal Healthcare Services in Sundargarh and Odisha, 1998-99 to 2011-12

Indicators	DLHS-1 (1998-99)		DLHS-2 (2002-04)		DLHS-3 (2007-08)		AHS-1 (2010-11)		AHS-2 (2011-12)	
	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha
Mothers who had any antenatal check-up during the last pregnancy	88.9	72.9	75.3	75.9	85.2	84.0	96.3	95.6	97.4	97.0
Mothers who received antenatal checkup from Govt. facility	55.6	43.3	48.6	44.7	41.9	58.9	76.1	57.7	77.4	57.7
Mothers who received antenatal check-up in first trimester	40.4	28.8	36.1	38.7	38.9	47.5	60.3	63.0	65.0	67.1
Mothers who received three or more antenatal check-up during the last pregnancy	55.9	43.7	43.0	47.3	53.3	54.5	76.0	76.0	79.5	78.5
Mothers who received at least one tetanus toxoid injection during the last pregnancy	86.9	79.7	85.6	84.8	82.0	82.0	96.0	95.1	97.2	96.6
Mothers who received 100 or more IFA tablets including syrup in the last pregnancy	-	-	25.8	24.3	47.2	48.1	22.4	21.6	28.1	26.0
Mothers who received full antenatal check-up	49.7	32.5	14.5	15.7	26.4	23.2	19.5	18.6	25.7	22.7
Institutional Deliveries	33.6	23.4	32.2	34.4	45.3	44.1	69.6	71.3	75.4	77.7
Home Deliveries	-	76.2	62.6	64.4	53.6	54.7	30.3	28.1	24.4	21.7
Home Deliveries assisted by Skilled Person	22.8	-	22.4	14.2	6.7	6.7	22.1	20.5	24.9	22.2
Safe Deliveries	48.9	32.7	46.2	43.5	52.0	50.8	74.0	75.2	79.4	80.8

Source: DLHS-1, 1998-99, Odisha; DLHS-2, 2002-04, Odisha; and DLHS-3, 2007-08, Odisha; AHS-1, 2010-11, Odisha and AHS-2, 2011-12, Odisha.

Table 3.13: Institutional Deliveries reported in Sundargarh District: 2000-2010

Year	Deliveries by Place (Number)		
	Institutional	Home	Total
2000-01	11,907	22,184	34,091
2001-02	12,972	23,685	36,657
2002-03	11,703	21,988	33,691
2003-04	12,647	21,192	33,839
2004-05	13,016	19,856	32,872
2005-06	14,656	19,977	34,633
2006-07	15,942	19,033	34,975
2007-08	26,922	12,923	39,845
2008-09	28,101	9,313	37,414
2009-10	25,351	7,160	32,511
2010-11 (Provisional)	27,051	5,207	32,258

Source: CDMO, Sundargarh, 2011

Table 3.14: Institutional Deliveries by Blocks of Sundargarh: 2011 (In Numbers)

SL. No.	Name of Block	Total Reported Deliveries			Institutional Deliveries		
		Male	Female	Total	Male	Female	Total
1	Badagaon	2	3	5	0	2	2
2	Balisankar	8	0	8	7	0	7
3	Baneigarh	8	2	10	4	2	6
4	Bishra	2	5	7	2	3	5
5	Gurundia	2	4	6	2	2	4
6	Hemagiri	2	1	3	2	1	3
7	Koira	5	8	13	5	4	9
8	Kuarmunda	3	2	5	3	2	5
9	Kutra	5	1	6	3	1	4
10	Lahunipada	8	2	10	4	0	4
11	Lathikata	10	3	13	9	2	11
12	Lephipada	4	0	4	2	0	2
13	Nuagaon	5	5	10	4	5	9
14	Rajgangpur	5	2	7	3	2	5
15	Sabdega	5	1	6	4	1	5
16	Sundargarh	2	1	3	2	0	2
17	Tangarpali	1	2	3	1	1	2
	Total	77	42	119	57	28	85

Source: Primary Survey for DHDR, 2011

Table 3.16: Status of Child Vaccination by ICDS Projects in Sundargarh: 2011

S. No.	ICDS Project	Tetanus	BCG	DPT / Polio	Measles
1	Balisankara	72.4	66.9	71.3	66.8
2	Bargaon	74.1	80.3	84.6	72.7
3	Biramitrapur	83.7	82.8	86.1	91.6
4	Bisra	77.4	88.4	81.4	84.1
5	Bonai	69.3	70.3	67.8	53.7
6	Gurundia	66.8	63.7	62.9	50.2
7	Hemgir	87.0	88.7	90.2	85.3
8	Koira	68.6	98.5	82.2	82.9
9	Kuarmunda	60.7	77.3	69.5	61.1
10	Kutra	66.3	77.8	73.0	58.1
11	Lahunipara	77.9	101.2	83.4	73.0
12	Lathikata	75.9	88.9	88.9	80.1
13	Lephripara	88.3	63.0	81.1	76.9
14	Nuagaon	65.8	78.4	72.4	81.8
15	Rajgangpur	50.2	58.0	43.0	56.0
16	Rourkela	70.4	91.6	90.0	82.5
17	Subdega	69.1	67.3	77.3	74.4
18	Sundargarh	80.8	62.1	82.8	98.5
19	Tangarpali	74.6	66.8	81.5	73.5
Sundargarh District		70.3	78.4	75.9	72.8

Source: District Social Welfare Officer, Sundargarh, 2011.

Notes: BCG: Bacillus Calmette Guerin; DPT: Diphtheria, tetanus, pertussis.



CHAPTER 4

Education



“Right education should help the student, not only to develop his capacities, but to understand his own highest interest. ”

-J. Krishnamurti

Education

4.1 Introduction

Education is considered an important indicator of human development. Quality education helps build human capital; improves per capita productivity and is an important determinant of socio-economic development. The UN Millennium Summit 2000 accorded very high priority to education. The 2nd Millennium Development Goal (MDG) seeks to achieve Universal Primary Education. The target for MDG 2

is to ensure that all boys and girls complete a full course of primary schooling. There are three major indicators to measure the achievements of universal primary education under MDG 2. These indicators are: (i) net enrolment in primary education, (ii) completion of grade-I to grade-VII by proportion of students, and (iii) literacy rates of male and female in 15-24 year age group. Box 4.1 summarises target and indicators for MDG 2.

Box 4.1 Millennium Development Goal 2:

Target:

To ensure that all boys and girls complete a full course of primary schooling.

Achieve Universal Primary Education

- Raising the Net Enrolment Ratio (NER) in primary education
- Ensuring that pupils starting grade 1 reach the last grade (Grade VIII) of elementary education
- The Literacy rates for women and men in the age group of 15-24 year

This chapter gives an overview of educational spread in the district before independence and in the early years of independence and discusses the current status, trends of growth and initiatives to promote education in the

district, particularly with a view to achieving the MDG target and indicators. This chapter also discusses challenges and constraints the district faces in promoting education, particularly among Scheduled Castes (SC),

Scheduled Tribes (ST) and minorities in the district.

The chapter is organised as follows. The next section gives an overview to the growth of education in the district from pre-independence period onwards. The 3rd section discusses efforts to promote school education in the district. The 4th section analyses the growth of literacy levels in the district and 5th section discusses educational infrastructure. The sixth section examines the status of enrolments at primary and upper primary levels, retention rate, transition rate and drop out rates. This section also analyses the status of out of school children in the district. The last section summarizes the educational achievements and concludes the chapter.

4.2 Early Beginnings of Modern Education in Sundargarh

In pre-independence period, Sundargarh district comprised of ex-States of Gangpur and Bonai and had poor literacy rates. For this period, reliable accounts as regards education are not available. However, during the pre-British period, elementary schools called "*Pathasalas*" operated in selected villages. These *Pathasalas* were run privately and access to *Pathasalas* was limited to only few people having better socio-economic status. Western education was introduced in the ex-State of Gangpur in the early part of 20th century during the rule of Maharaja Raghunath Sekhar Deo. In 1907-08, the ex-State of Gangpur had 3 Upper Primary and 66 Lower Primary schools. The number of students on the roll was 1,547 and expenditure on education was of the order of Rs. 1,434. Towards the end of the first decade of 20th century, one Middle English School was established at Sundargarh. During the second decade, the number of different types of schools in the ex-State increased to 52 with enrolment of 3,456 students, the proportion of girls being only 13 percent.

The Middle English School was later allowed to have VIII grade. The first batch of students of this school appeared at the

Matriculation examination in 1924. In 1925-26, besides the High English School, there were 196 other educational institutions in the district. These included 5 Middle Vernacular schools, 22 Upper Primary schools including one Girl's school, 168 lower primary schools including 10 schools for girls and one institution for Teacher's Training. Gradually the number of students increased to 7,607 during 1925-26 of which 14.2 percent were girls. Towards the end of the third decade, the number of schools managed by the ex-State was 113 which included one High English School, 2 Middle English schools, 4 Middle Vernacular schools, 30 Upper Primary schools including one school exclusively for girls, 74 Lower Primary Schools including one exclusively for Girl's, one elementary training school and one Sanskrit school. The total number of students in the ex-State managed schools by the end of 31st March 1940 was 7,310 of which 14.23 percent were girls.

After the merger of both ex-states with Odisha, the educational scenario of the district changed significantly after independence. The State and Central Government took several initiatives to promote education in the district. The educational policy also put emphasis for spreading education among the tribals due to their larger share in population of the district. Special *Ashrams* and *Sevashrams* were started in different parts of the district. Students from SC and ST communities were given free education with provision of free reading and writing materials. They were also trained in different crafts, agricultural practices and vocational courses like tailoring, spinning, weaving and carpentry along for self-employment. Students were provided stipends to pursue their education. By mid-seventies, the district had 6 tribal high schools including 2 for girls and 4 *Ashram* schools of middle education standard which includes one girl's school. Two *sevashrams* of Upper Primary standard and 89 *sevashrams* of lower primary standards also functioned in the district to cater to the needs of SC and ST students.

The district had a literacy rate of only 11.8 percent with male literacy of 10.1 percent and female literacy of 1.7 percent as per 1951 census. The literacy rate in the district increased to 23 percent with the male literacy of 35.1 percent and female literacy of 9.5 percent in 1961 census¹. Panposh sub-division recorded the highest literacy rate followed by Sundargarh and Bonai sub-divisions. The district has since 1961 made significant strides in promoting education. The overall literacy rate of the district has increased to 73.3 percent in 2011 with the male literacy rate of 81.0 percent and female literacy rate of 65.5 percent. The gross enrollment in the district has increased more than 100 percent and net enrollment has gone up to more than 90 percent in almost all blocks and urban local bodies (ULB) of the district. The enrollment of SC and ST students has also increased significantly in the district during this period. However, the literacy levels of ST communities are comparatively low and their drop-out rates are moderately high.

Administrative Arrangements

Table 4.1 Summaries administrative arrangements at block and ULBs level for smooth implementation of various education programmes in the district. At present, the district has only one Education Circle under the administrative control of one Circle Inspector (CI) of Schools. The Education Circle is divided into three Education Districts namely Bonai, Rourkela and Sundargarh, each headed by a District Inspector (DI) of Schools. Bonai Education District controls only 4 blocks. Rourkela Education District has jurisdiction over 4 blocks and 2 ULBs. Sundargarh Education

District spreads over 9 blocks and 2 ULBs. Each block is divided in to two or more units, each headed by a Sub Inspector of Schools.

After the *Sarva Shiksha Abhiyan* (SSA) was introduced in the district in 2003, a District Project Coordinator (DPC) was given the responsibility to supervise and strengthen the implementation of the programme. The DPC is assisted by different specialised resource persons for designated activities. Block Resource Centres (BRC) have been set-up in each block for smooth execution of SSA activities. To strengthen implementation of different SSA activities at grassroots level, each block has been divided into Clusters with 15 schools in each. Each Cluster has one Cluster Resource Centre Co-coordinator (CRCC) to facilitate SSA activities at Cluster level. The district has been divided into 51 Educational Blocks, 17 Block Resource Centres, and 219 Cluster Resource Centres (CRC) to maintain the focus on SSA activities.

4.3 Efforts to Promote School Education

Both Government of India and the State Government have taken several initiatives to augment substantially education and literacy levels since early 1950s. A Secondary Education Commission was appointed in 1952-53. All five year plans gave special focus to education at all levels. The Third Five Year Plan introduced free and compulsory primary education. The subsequent plans continued to stress on promoting and popularising education and liberally supporting several educational programmes. On the basis of the Education Commission, 1964-66, the first National Education Policy (NEP) was promulgated in 1968. The aim of NEP was to promote education from elementary to college level in both urban and rural areas.

¹The methodology for calculation of literacy rates in 1951 was different than that is currently followed. There are two notable differences in both methodologies. First, while calculating literacy rates, children in the age group 0-4 year have been excluded from total population in 1951. Second, in 1951, male and female literacy rates have been worked out by dividing male and female literates respectively by total population excluding children of age group 0-4 years. As per the current methodology, on the other hand, male literacy is calculated by dividing male literates by male population minus male children in 0-6 year age group and female literacy by dividing female literates by female population minus female children in 0-6 year age group. The overall literacy rate is worked out dividing total (male and female) literates by total population minus children (male and female) in 0-6 year age group. Therefore, literacy rates computed by two different methodologies are not strictly comparable. Though the methodology of 1951 census was also followed for 1961 census, the literacy rates for males and females have been worked out by dividing male literates by male population excluding male children in 0-4 year age group and the same method for female literacy rates.

Table 4.1: Administrative Arrangements by Block/ULB in Sundargarh District: 2010-11
(In numbers)

SL. No.	Name of Block/ULB	Educational Blocks	Block Resource Centres	Cluster Resource Centres	Gram Panchayats	Villages/Wards	Habitations
Block							
1	Balisankara	4	1	14	16	83	216
2	Bargaon	2	1	12	13	69	194
3	Bisra	2	1	10	15	68	332
4	Bonai	3	1	10	13	102	148
5	Gurundia	3	1	14	13	138	208
6	Hemgir	4	1	14	19	136	357
7	Koira	3	1	13	12	109	227
8	Kuarmunda	3	1	13	20	105	285
9	Kutra	2	1	10	16	54	330
10	Lahunipara	3	1	16	17	211	349
11	Lathikata	2	1	13	16	82	343
12	Lephripara	3	1	12	17	103	408
13	Nuagaon	3	1	13	20	119	446
14	Rajgangpur	3	1	12	12	70	188
15	Subdega	2	1	10	14	59	397
16	Sundargarh	3	1	10	16	85	225
17	Tangarpali	2	1	10	13	73	271
ULB							
1	Birimitrapur	1	0	2	0	11	183
2	Rajgangpur	1	0	2	0	19	191
3	Rourkela	1	0	7	0	32	206
4	Sundargarh	1	0	2	0	19	199
Sundargarh District		51	17	219	262	1,747	5,703

Source: OPEPA, DIES, 2011-12

The NEP emphasized the following aspects: (1) universal access and enrolment, (2) universal retention of children up to 14 years of age, (3) a substantial improvement in the quality of education and (4) revival of Sanskrit and other classical language for contemporary use.

The National Education Policies were revised in 1986 and 1992. The 1986 NEP gave special emphasis to remove disparities and equalise educational opportunities, particularly for women, ST and SC communities. It stressed on expanding scholarship for meritorious and needy

students, promotion of adult education, recruiting more teachers and incentivising primary education. The 'Operation Blackboard' was launched after the 1986 NEP. The 1992 NEP gave stress on quality engineering, architectural and planning education. The 42nd amendment of Constitution of India placed education in the concurrent list and 93rd amendment made education a fundamental right. The Right to Education Act has been enacted in 2009. In line with the National approach to promoting education, Odisha also articulated its strategies to promote education and enhance

literacy levels both in rural and urban areas and for marginalised sections including women, SC and ST communities. In recent years, several new initiatives have been launched. These initiatives include: *Sarva Shiksha Abhiyan* District Primary Education Programme (DPEP), National Programme for Education of Girls at Elementary Level (NPEGL), *Kasturba Gandhi Balika Vidyalayas* (KGBV) and 100 seated hostels for ST / SC girls and boys. The State has also initiated different measures for improving quality of education with the introduction of *Ama Vidyalaya* Programme, quality school package for 6,000 schools covering all 30 districts, and development of resource materials (*Samadhan*). Odisha has prohibited corporal punishment in schools; discontinued the practice of Board examination at elementary level and introduced school support scheme. In Sundargarh district, 98,069 boys and 110,155 girls have been provided uniforms out of 109,138 boy and 110,155 girl students. Some of the major initiatives for promoting education are briefly summarised below.

Sarva Shiksha Abhiyan

Sarva Shiksha Abhiyan a centrally sponsored scheme, has been implemented in Odisha and Sundargarh district and has three fold objectives: universal enrollment, retention and quality of education up to Class VIII in the age group of 6-14 years. The scheme is currently jointly funded by both Government of India and the State Government. The special features of the scheme are: (a) all children in 6-14 year age group should be enrolled in school or EGS, (b) all children to complete five year schooling and eight year schooling by specified dates, (c) universal retention of children in school by specified date, (d) emphasis on elementary education of satisfactory quality with focus on education for life and (e) bridge gender and social gaps at primary stage of education.

District Primary Education Programme

This is a centrally sponsored programme jointly funded in the ratio of 85:15 by the centre and state. The programme focuses on eight districts of Odisha including

Sundargarh that lag behind in achieving the State objectives on education. The programme aims at opening new primary schools, creating additional class rooms and increasing enrolments in primary schools.

National Programme for Education of Girls at Elementary Level

The National Programme for Education of Girls at Elementary Level (NPEGEL) is a part of SSA and aims to promote education among girls. NPEGEL provides additional support for promoting girls' education and has been implemented in educationally backward blocks where level of rural female literacy rate is less than the national average and gender gap is above the national average. The programme has also been implemented in districts having atleast 5 percent SC/ST population where SC/ST female literacy rate is below 10 percent.

The scheme has been implemented in 13 educationally backward blocks of Sundargarh district. Total 150 Model Cluster Schools (MCS) have been established in rural areas and one MCS in the ULB (Biramitrapur). In these 151 MCS, 81,548 girl students have been enrolled, of which 30.0 percent are from SC communities, 42.0 percent from ST groups, 16.0 percent students are from other backward classes, 2.0 percent from minorities communities and rest 10.0 percent from other categories. Table 4.2 summarises the performance of NPEGL in the district.

Kasturba Gandhi Balika Vidyalayas

This scheme is also a part of SSA and aims at providing schooling facilities for out-of-school girls in educationally most backward blocks. The scheme is applicable only to the identified Educationally Backward Blocks where, as per census 2001, the rural female literacy is below the national average and gender gap in literacy is more than the national average. Under SSA-RTE Act, the above criteria is now modified and more EBB have been added on the basis of rural female literacy only. Residential schools are created and boarding facilities have been improved to facilitate enrolment of girls of ST, SC, OBC and minority communities at primary level.

Table 4.2: Performance of NPEGEL by Blocks/ULBs of Sundargarh District

SL. No.	Name of Block/ ULB	EBB (No.)	MCS (No.)	Enrolments by Social Categories					
				SC	ST	OBC	Minorities	Others	Total
Block									
1	Balisankara	1	16	2,359	3,306	1,258	157	7,815	7,865
2	Bargaon	0	0	0	0	0	0	0	0
3	Bisra	1	11	1,495	2,093	797	100	498	4,983
4	Bonai	1	9	1,448	2,026	772	97	483	4,826
5	Gurundia	1	16	2,178	3,049	1,162	145	726	7,260
6	Hemgir	0	0	0	0	0	0	0	0
7	Koira	1	11	1,575	2,205	840	105	525	5,250
8	Kuarmunda	0	0	1,406	1,968	750	94	469	4,687
9	Kutra	1	5	1,402	1,962	748	93	467	4,672
10	Lahunipara	1	15	1,836	2,571	979	122	612	6,120
11	Lathikata	1	12	2,046	2,866	1,092	136	682	6,822
12	Lephripara	0	0	0	0	0	0	0	0
13	Nuagaon	1	13	1,746	2,445	931	116	582	5,820
14	Rajgangpur	1	10	1,766	2,470	9413	118	589	5,886
15	Subdega	1	10	1,469	2,056	783	98	490	4,896
16	Sundargarh	1	11	1,567	2,194	836	105	523	5,225
17	Tangarpali	1	11	1,469	2,056	783	98	490	4,896
ULB									
1	Biritrapur	0	1	702	983	374	47	234	2,340
2	Rajgangpur	0	0	0	0	0	0	0	0
3	Rourkela	0	0	0	0	0	0	0	0
4	Sundargarh	0	0	0	0	0	0	0	0
Sundargarh District		13	151	24,464	34,250	13,048	1,631	8,155	81,548

Source: OPEPA, DISE, 2010-11 & AWP&B 2010-11

Notes: EBB-Educationally Backward Blocks, MCS-Model Cluster Schools

In Sundargarh, two KGBV have already been constructed, one at Bonaigarh and other one at Koira. Another eight KGBV have been sanctioned for construction.

Scheme for Escort/Transportation Facilities

Where distance of a school from a habitation is more than the stipulated norm (1 km under SSA and schools within the area or limits of neighbourhood as per RTE), financial incentive is provided to students for transportation. During 2013-14, a total of 726 students in primary and 273 students in upper primary schools benefitted from this scheme. Establishment of schools, in such habitations remains a challenge as households are residing in a scattered manner.

Children with Special Needs

As a part of inclusive education promotion strategy, Children with Special Needs (CWSN) have been identified across all blocks and ULB of the district. Measures have been taken to enrol them in school. During 2013-14 out of 5,409 CWSN including 2,400 girls identified in the district, 5,388 (99.61 percent) children including 2,395 girls were enrolled in different schools. Government has been taking steps to provide ramps as a part of school readiness programme so that accessibility of such children to educational establishments is not restricted. Apart from that, it has been planned to initiate proactive measures for such children, based on their needs like provision of home based education,

construction of disabled friendly toilets, provision of braille books to students.

Computer Aided Learning

In order to cope with emerging educational requirements of children and to make computer as means of education, Computer Aided Learning (CAL) system has been introduced in upper primary schools. Computer aided learning is already introduced in about 11.3 percent upper primary schools with a coverage of 16,886 students. To impart computer aided education, 210 teachers, across all blocks and ULB have been trained. The scheme has so far covered 16,886 students who have been given computer aided education in select 105 schools.

Pre-School Education through Anganwadies

Pre-school education prepares children to be acquainted with collective learning process through systematic preparatory inputs. In this regard, *Anganwadi* centres function as pre-schools for very young children. Mothers are motivated to send their children, below 5 years of age, to local *Anganwadi* centres for enhancing their learning which is attempted by way of using games, toys and stories. About 72,600 children were enrolled in such pre-schools during 2010-11 with average attendance of 89.7 percent. Table 4.3 gives the status of children going to pre-schools in nearby anganwadies in the district for the year 2010-11.

Table 4.3: Status of Enrolment and Attendance in Anganwadi Pre-schools by Blocks/ULB: 2010-11

(In numbers)

SL. No.	Name of Block / ULB	Children Enrolled in Anganwadi Pre-schools		Average Attendance	
		March 2010	February 2011	March 2010	February 2011
Block					
1	Balisankara	4,539	4,323	4,059	3,981
2	Bargaon	3,334	3,019	2,955	2,633
3	Bisra	3,460	3,215	3,259	3,215
4	Bonaigarh	2,735	3,135	2,423	2,813
5	Gurundia	2,981	2,652	2,594	2,652
6	Hemagiri	3,384	3,536	3,261	3,357
7	Koida	3,796	3,642	3,495	3,422
8	Kuarmunda	4,260	4,274	3,820	3,642
9	Kutra	3,408	3,458	2,928	2,970
10	Lahunipara	5,697	5,915	4,960	5,102
11	Lathikata	4,752	4,771	4,177	4,369
12	Lephripa	3,598	3,588	3,472	3,346
13	Nuagaon	5,472	5,308	4,400	4,450
14	Rajgangpur	5,961	6,264	4,946	5,253
15	Subdega	2,948	2,663	2,681	2,318
16	Sundargarh	3,460	2,928	3,255	2,850
17	Tangarpali	2,674	2,481	2,038	2,334
Urban					
1	Biramitrapur	1,193	1,145	1,040	1,028
2	Rourkela	3,819	6,283	3,386	5,416
	Sundargarh District	71,471	72,600	63,149	65,151

Source: DSWO, Sundargarh, 2011

Efforts for Education of Child Labour

There are special Child Labour Schools in all blocks and ULB for the education of identified child labourers. These schools are operated under National Child Labour Programme (NCLP). About 1,950 students have been enrolled in 39 NCLP schools with average number students being 50 in each.

This initiative has created opportunities for poor children who were engaged earlier as child labourers and had not availed any opportunity to educate themselves for various reasons. Table 4.4 gives the status of child labour schools by blocks and ULB in the district in 2010-11.

Table 4.4: Status of Child Labour Schools by Block / ULB in Sundargarh: 2010-11 (In numbers)

Sl. No.	Name of Block /ULB	Child Labour Schools	Student Strength
Rural			
1	Balisankara	1	50
2	Bargaon	2	100
3	Bisra	3	150
4	Bonaigarh	2	100
5	Gurundia	1	50
6	Hemgiri	1	50
7	Koida	2	100
8	Kuanarmunda	1	50
9	Kutra	1	50
10	Lahunipada	-	-
11	Lathikata	1	50
12	Lephrpada	2	100
13	Nuagaon	2	100
14	Rajgangpur	3	150
15	Subdega	1	50
16	Sundargarh	1	50
17	Tangarpalli	1	50
Urban			
1	Biramitrapur	1	50
2	Rajgangpur	1	50
3	Rourkela	11	550
4	Sundargarh	1	50
Sundargarh District		39	1,950

Source: Project Director NCLP, Sundargarh, 2011

4.4 Literacy Levels in Sundargarh District

The overall literacy rate in Sundargarh district was reported 11.8 percent in 1951 with male literacy rate of 10.1 percent and female literacy rate of 1.7 percent². The overall literacy rate in 1961 in the district became 23.0

percent with the male literacy rate of 35.1 percent and female literacy rate of 9.5 percent. It may be observed that there were appreciable improvements in literacy rates in 1961 over 1951³. Table 4.5 analyses literacy rates by region and gender in the district from 1961 to 2011.

²See footnote 1.

³The methodology for the years 1991-2011 is the same and results are comparable. For 1961, literacy rates have been worked by dividing total literates by total population and subtracting child population in 0-4 year age group instead of 0-6 year age group.

Table 4.5: Literacy Rates by Area and Gender in Sundargarh District: 1961 to 2011

Year	Area	Literates (number)			Literacy Rates (percent)		
		Persons	Males	Females	Persons	Males	Females
1961	Total	149,546	120,487	29,059	23.0	35.1	9.5
1991	Rural	359,246	240,344	118,902	41.6	55.3	27.7
	Urban	334,579	203,485	131,094	75.0	83.3	64.9
	Total	693,825	443,829	249,996	53.0	65.4	39.6
2001	Rural	560,811	342,715	218,096	55.3	67.4	43.1
	Urban	454,674	260,795	193,879	82.5	89.0	75.0
	Total	1,015,485	603,510	411,975	64.9	75.3	53.9
2011	Rural	782,147	441,493	340,654	66.6	75.6	57.7
	Urban	560,175	308,654	251,521	85.3	90.2	80.0
	Total	1,342,322	750,147	592,175	73.3	81.0	65.5

Source: Census of India 1961, 1991, 2001 and 2011

For the year 1961, distribution of literates by region (rural and urban) is not readily available. Therefore, the literacy rates for 1961 are only for the district as a whole. It may be observed that the literacy rates in the district have increased by 50.3 percentage points from 23.0 percent in 1961 to 73.3 percent in 2011. The male literacy in the district has risen by 45.9 percentage points from 35.1 percent in 1961 to 81.0 percent in 2011 and the female literacy has increased by 56.0 percentage points from 9.5 percent in 1961 to 65.5 percent in 2011. Though the female literacy continues to be still lower than male literacy in the district, the gender gap in

literacy levels that was 25.6 percentage points in 1961 has come down to 15.5 percentage points in 2011.

The rural literacy rates have increased from 41.6 percent in 1991 to 66.6 percent in 2011 and the urban literacy rates have improved from 75.0 percent in 1991 to 85.3 percent in 2011. However, the gap between rural and urban literacy is still very high in the district, though the rural-urban gap that was 33.4 percentage points in 1991 has come down to 18.7 percentage points in 2011. Similarly, gaps between rural male and female literacy rates and urban male and female literacy rates have also shown declining trends.

Table 4.6: Literacy Rates by Social Groups and Regions in Sundargarh: 1991 to 2011

Area	Social Group	1991		2001		2011	
		Sundargarh	Odisha	Sundargarh	Odisha	Sundargarh	Odisha
All	All	53.0	49.1	64.9	63.1	73.3	72.9
	SC	43.9	36.8	61.5	55.5	70.9	69.0
	ST	37.3	22.3	52.8	37.4	65.1	52.2
Rural	All	41.6	45.5	55.3	59.8	66.6	70.2
	SC	39.4	NA	56.7	54.2	67.3	68.1
	ST	34.9	NA	50.1	36.1	63.2	51.1
Urban	All	74.9	72.0	82.5	80.8	85.3	85.7
	SC	52.0	NA	70.5	65.2	76.4	75.2
	ST	52.8	NA	70.1	58.1	75.3	69.1

Source: Census of India 1991, 2001 and 2011

Table 4.6 analyses literacy rates by social groups and regions in the district from 1991 to 2011. It may be observed that the literacy rates for SC communities have increased by 27 percentage points from 43.9 percent in 1991 to 70.9 percent in 2011. Similarly, the literacy rates for ST communities have increased by 27.8 percentage points from

37.3 percent in 1991 to 65.1 percent in 2011. SC communities have fared well in terms of literacy as compared to ST communities. The literacy gap that was 6.6 percentage points in 1991 has, however, come down to 5.8 percentage points. The district has, however, been doing better than the State average as far as literacy rates for SC and ST communities are concerned.

Table 4.7: Literacy Rates by Blocks /ULB in Sundargarh: 1991 & 2001

Sl. No.	Name of Blocks /ULB	1991			2001		
		Persons	Male	Female	Persons	Male	Female
Block							
1	Balisankara	42.07	55.89	28.61	58.25	70.64	46.31
2	Bargaon	44.81	58.19	31.08	60.40	72.18	48.60
3	Bisra	40.52	54.19	26.29	62.70	74.16	50.71
4	Bonaigarh	50.62	65.49	35.71	43.04	54.70	31.26
5	Gurundia	36.12	50.50	21.95	48.25	61.70	34.83
6	Hemagiri	47.76	64.05	30.93	63.08	75.14	50.57
7	Koida	31.14	45.64	15.96	43.91	57.74	29.53
8	Kuanarmunda	38.80	50.81	26.56	51.41	62.08	40.63
9	Kutra	43.22	56.03	30.38	59.10	70.28	47.97
10	Lahunipara	35.87	49.10	22.54	48.78	59.43	38.12
11	Lathikata	41.00	54.88	26.52	59.55	75.10	51.25
12	Lephrpada	45.84	59.09	32.48	60.89	72.06	49.61
13	Nuagaon	36.87	50.28	23.36	47.94	59.69	36.24
14	Rajgangapur	35.59	47.89	23.16	55.27	66.08	44.55
15	Subdega	42.80	56.03	29.56	56.27	67.57	45.17
16	Sundargarh	50.86	66.29	35.35	63.52	76.13	50.85
17	Tangarpali	45.90	59.83	32.00	60.25	72.44	47.95
Block Total		41.61	55.35	27.70	55.3	67.4	43.1
ULB							
1	Birmitrapur	60.08	71.34	47.91	72.04	81.60	62.22
2	Rajgangapur	70.85	79.74	60.71	78.72	85.64	71.35
3	Rourkela	75.73	83.77	65.37	84.60	90.43	77.71
4	Sundargarh	77.03	85.00	68.33	83.90	54.77	78.15
ULB Total		74.95	83.28	64.88	82.5	89.0	75.0
Sundargarh District		52.97	65.41	39.60	64.86	75.34	53.88

Source: Census of India, 1991 and 2001

Table 4.7 compares literacy rates by gender and blocks and urban local bodies in the district for 1991 and 2001 census years. It may be observed that Sundargarh and Hemgiri blocks have reported highest literacy rates of 63.52 percent and 63.08 percent in 2001. The literacy rates in Sundargarh block

increased from 50.89 percent in 1991 to 63.52 percent in 2001 and the rise in Hemgiri block was even better from 47.76 percent in 1991 to 63.08 percent in 2001. Bonai and Koida blocks reported lowest literacy rates in 2001. There was reduction in literacy rate in Bonai from 50.62 percent in 1991 to 43.04 percent

in 2001. In Koida block, the literacy rates increased from 31.14 percent in 1991 to 43.91 percent in 2001. Table 4.8 analyses literacy rates by gender and social groups in different blocks and urban local bodies for the census

year 2001. The relevant data on literacy rates by blocks / ULB and gender for different social groups (i.e., SC, ST and Minorities) is yet not available for the census year 2011.

Table 4.8: Literacy Rates by Social Groups and Gender in Sundargarh: 2001

SL. No	Name of Block/ULB	All Communities			Scheduled Castes			Scheduled Tribes			Minorities		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Rural													
1	Balisankara	70.64	46.31	58.25	78.91	52.07	65.49	69.45	44.58	57.01	46.07	33.35	39.71
2	Bargaon	72.18	48.60	60.40	56.90	36.92	46.91	45.06	28.07	36.57	24.26	16.38	20.32
3	Bisra	74.16	50.71	62.70	45.79	29.28	37.53	32.76	19.75	26.25	13.26	7.82	10.54
4	Bonai	54.70	31.26	43.04	64.83	42.69	53.76	53.85	34.35	44.10	32.12	22.83	27.48
5	Gurundia	61.70	34.83	48.25	41.22	26.14	33.68	27.71	16.33	22.02	8.74	4.30	6.52
6	Hemgir	75.14	50.57	63.80	83.71	55.42	69.56	74.75	48.22	61.48	50.81	37.09	43.95
7	Koira	57.74	29.53	43.91	63.10	41.19	52.15	51.93	32.72	42.33	30.41	21.16	25.78
8	Kuarmunda	62.08	40.63	51.41	69.34	45.48	57.41	58.84	37.40	48.12	36.58	25.97	31.27
9	Kutra	70.28	47.97	59.10	60.28	39.25	49.76	48.81	30.61	39.71	27.61	18.99	23.30
10	Lahunipara	59.43	38.12	48.78	72.84	47.89	60.36	62.72	40.02	51.37	40.05	28.67	34.36
11	Lathikata	75.10	51.25	59.55	77.05	50.79	63.92	67.39	43.18	55.28	44.22	31.92	38.07
12	Lephripara	72.06	49.61	60.89	85.68	56.73	71.21	76.94	49.65	63.29	52.77	38.57	45.67
13	Nuagaon	59.69	36.24	47.94	84.95	56.23	70.59	76.13	49.10	62.61	52.05	38.00	45.02
14	Rajgangpur	66.08	44.55	55.27	63.64	41.57	52.60	52.54	33.13	42.83	30.94	21.58	26.26
15	Subdega	67.57	45.17	56.27	57.92	37.63	47.78	46.20	28.84	37.52	25.28	17.17	21.23
16	Sundargarh	76.13	50.85	63.52	100.0	66.83	83.59	93.19	60.65	76.92	67.30	49.87	58.59
17	Tangarpali	72.44	47.95	60.25	96.68	64.30	80.49	89.12	57.89	73.50	63.66	47.04	55.35
Urban													
1	Birimitrapur	81.60	62.22	72.04	98.25	65.38	81.82	90.86	59.07	74.97	65.22	48.25	56.74
2	Rajgangpur	85.64	71.35	78.72	85.64	56.70	71.17	76.89	49.62	63.25	52.73	38.53	45.63
3	Rourkela	90.43	77.71	84.60	90.75	69.27	80.01	93.62	58.51	76.07	67.69	47.68	57.69
4	Sundargarh	78.15	54.17	83.90	79.11	47.34	63.23	58.59	37.23	47.91	36.36	25.80	31.08
Sundargarh District		75.34	53.88	64.86	74.14	49.01	61.57	64.16	40.90	52.53	41.34	29.57	35.46

Source: Census of India, 2001

Table 4.9: Distribution of Schools by Ownership and by Blocks/ULB: 2011-12

(In number)

SL. No.	Name of Block /ULB	Govt. Schools	Aided Private Schools	Un-aided Private Schools	Other Schools	Central Schools	Unrecognised Schools	Total
Block								
1	Balisankara	175	18	7	1	0	0	201
2	Bargaon	137	17	2	1	0	5	162
3	Bisra	109	12	11	0	0	5	137
4	Bonai	122	4	7	2	0	2	137
5	Gurundia	181	16	6	0	0	0	203
6	Hemgiri	181	4	3	0	0	2	190
7	Koira	164	5	9	2	0	3	183
8	Kuarmunda	136	34	6	0	0	1	177
9	Kutra	108	25	4	0	1	3	141
10	Lahunipara	184	10	8	0	1	0	203
11	Lathikata	155	17	15	1	0	5	193
12	Lephripara	148	14	3	2	1	2	170
13	Nuagaon	143	21	16	0	0	3	183
14	Rajgangpur	121	31	4	3	1	1	161
15	Subdega	112	16	4	0	0	2	134
16	Sundargarh	132	8	4	1	1	2	148
17	Tangarpali	123	4	6	3	0	1	137
Urban								
1	Biramitrapur	21	3	4	1	0	0	29
2	Rajgangpur	25	6	7	2	0	7	47
3	Rourkela	125	15	57	0	2	16	215
4	Sundargarh	29	5	5	0	1	6	46
Sundargarh District		2,631	285	188	19	8	66	3,197

Source: OPEPA, CMS, 2011-12

4.5 Educational Infrastructure

In 1947-48, before the merger of two ex-states of Gangpur and Bonai with Odisha, there were 181 primary schools, 17 middle english schools and 2 high schools in the district. The number of schools was increased to 251 primary schools, 19 middle english schools and 3 high schools in 1950-51. In 1960-61, the district had total 913 schools including 832 primary schools, 66 middle english schools and 15 high schools.

The district had 3,197 schools comprising 1,838 primary schools, 905 upper primary schools and 454 high schools in 2011-12. Table 4.9 gives the distribution of schools by ownership and by blocks/ULB in the district in 2011-12. Out of these 3,197 schools, 2,639 schools (82.5 percent) are managed by Government and 285 (8.9 percent) schools are private aided schools. Of the rest, 188 (5.9 percent) are unaided private schools and

85 (2.7 percent) are unrecognised and other schools. There were 219 cluster resource centres in the district in 2011-12 as against 284 in 2005-06. Schools in the district have been further classified as primary, upper primary and secondary schools.

Table 4.10 gives the distribution of schools by type and by Blocks / ULB in the district in 2011-12. Of total 5,703 habitations in the district, 5,364 habitations (94.06 percent) have primary schools and only 339 habitations are without any school. This affects 1,146 children of school going age. There is a need to have at least a primary

school in each uncovered habitation in the district. Availability of adequate infrastructure in schools facilitates learning and helps promoting education. The Right to Education (RTE) Act has prescribed certain norms in this regard such as distance of a school from a habitation and facilities to be provided in schools. Schools are required to have proper building, library, proper kitchen for mid-day-meals, safe drinking water facility, separate toilets for boys and girls and play material; should function for at least prescribed minimum number of working days; and have prescribed number of instruction hours in an academic year.

Table 4.10: Distribution of Schools by Type and Blocks/ULB Sundargarh: 2011-12

(In number)

SL. No.	Name of Block / ULB	Only Primary Schools	Schools with Primary / Upper Primary Classes	Schools with Primary to Secondary classes	Only Upper Primary Schools	Schools with Upper Primary/ Secondary Classes	Only Secondary Schools	Total
Block								
1	Balisanakara	125	43	4	11	15	3	201
2	Bargaon	101	33	3	12	13	0	162
3	Bisra	77	33	11	6	4	6	137
4	Bonai	72	38	3	8	15	1	137
5	Gurundia	123	49	3	13	5	10	203
6	Hemgiri	104	58	9	4	7	8	190
7	Koira	110	53	4	3	11	2	183
8	Kuarmunda	114	27	9	13	4	10	177
9	Kutra	72	35	8	11	15	0	141
10	Lahunipara	116	57	8	5	2	15	203
11	Lathikata	112	48	5	11	6	11	193
12	Lephripara	99	37	5	8	20	1	170
13	Nuagaon	118	34	7	7	8	9	183
14	Rajgangpur	108	25	4	10	11	3	161
15	Subdega	82	28	5	5	11	3	134
16	Sundargarh	82	40	2	5	19	0	148
17	Tangarpali	80	37	4	4	12	0	137
ULB								
1	Biramitrapur	13	9	3	1	3	0	29
2	Rajgangpur	17	17	4	1	6	2	47
3	Rourkela	73	40	29	24	31	18	215
4	Sundargarh	20	11	4	1	4	3	46
Sundargarh District		1,818	755	134	163	222	105	3,197
Odisha		36,399	17,918	1,860	4,027	7,361	202	67,767

Source: OPEPA

Table 4.11: Status of Schools without Proper Infrastructure by Block/ULB: 2011-12
(In number)

Sl. No.	Name of Block / ULB	Govt. School	No Toilet		No Drinking Water	No Electricity	No Play Ground	No Ramp	No Kitchen Shed	No Building	No Boundary Wall
			Boys	Girls							
Rural											
1	Balisankara	162	102	0	0	146	140	57	101	0	71
2	Bargaon	127	10	18	0	114	110	17	87	0	52
3	Bisra	101	74	1	0	77	85	51	69	0	53
4	Bonai	109	74	0	0	88	99	15	56	1	26
5	Gurundia	170	112	1	0	151	150	63	115	7	92
6	Hemgiri	164	92	2	0	145	148	59	102	0	58
7	Koira	156	135	0	0	145	146	81	106	2	69
8	Kuarmunda	124	79	6	0	104	89	7	74	0	57
9	Kutra	97	68	0	0	83	79	31	38	0	41
10	Lahunipara	170	118	4	0	144	137	58	122	7	60
11	Lathikata	143	36	11	0	118	116	41	81	2	45
12	Lephripara	133	76	0	0	108	124	22	110	0	49
13	Nuagaon	131	76	2	0	111	107	13	78	0	57
14	Rajgangpur	113	70	4	0	101	98	46	56	0	50
15	Subdega	100	53	1	0	92	84	4	45	0	34
16	Sundargarh	120	70	3	0	36	22	39	82	0	31
17	Tangarpali	112	55	0	0	95	98	44	64	4	29
Urban											
1	Biramitrapur	18	8	0	0	13	14	4	15	0	3
2	Rajgangpur	21	15	0	0	14	15	16	19	0	5
3	Rourkela	97	78	0	0	60	58	58	78	0	27
4	Sundargarh	26	19	0	0	11	14	12	18	0	3
Sundargarh District		2,394	1,420	53	0	1,956	1,933	738	1,516	23	912

Source: OPEPA

Table 4.11 gives the status of schools which lacked proper infrastructure in different blocks and ULB of Sundargarh in 2011-12. It may be observed that out of 2,394 Government-run schools, 1,420 do not have boys' toilets and only 53 schools do not have girls' toilets. There is no building in 23 schools and 1,956 schools do not have electricity. There is no play ground in 1,933

schools and no kitchen shed in 1,516 schools. There is no boundary wall for 912 schools. However, all schools have safe drinking water facilities. Only about 60 primary schools (3.2 percent) were single classroom schools in the district in 2011-12. Highest number of 24 such schools was in Balisankara block and Tangarpali block had only one such school.

Single Teacher Schools

As per the SSA norms, there should be at least one teacher for every 35 students and pupil teacher ratio should not exceed 40 excluding head teacher. There should be at least two teachers in a primary school and one teacher for every class in a upper primary school. There is, however, acute shortage of teachers in many primary and upper primary schools. About 198 schools are single teacher schools in the district as in 2011-12. This amounts to

6.19 percent of total schools in the district. Table 4.12 gives the distribution of single teacher schools by block / ULB in the district in 2011-12. It may be observed from Table 4.12 that Gurundia block has highest number of 52 single teacher schools which are about 25.6 percent of the total schools in that block. Sundargarh, Bisra and Bonai blocks have only 2 such schools each (1.35 percent in Sundargarh block and 1.46 percent in each Bisra and Bonai block).

Table 4.12: Status of Single Teacher Schools by Block/ULB in Sundargarh: 2011-12

(In number)

SL.No.	Name of Block/ULB	Total Schools	Single Teacher Schools	Single Teacher Schools (percent)
Block				
1	Balisankara	201	20	9.95
2	Bargaon	162	8	4.94
3	Bisra	137	2	1.46
4	Bonai	137	2	1.46
5	Gurundia	203	52	25.62
6	Hemgir	190	20	10.53
7	Koira	183	19	10.38
8	Kuarmunda	177	7	3.95
9	Kutra	141	9	6.38
10	Lahunipara	203	4	1.97
11	Lathikata	193	6	3.11
12	Lephripara	170	7	4.12
13	Nuagaon	183	12	6.56
14	Rajgangpur	161	12	7.45
15	Subdega	134	10	7.46
16	Sundargarh	148	2	1.35
17	Tangarpali	137	4	2.92
ULB				
1	Birimitrapur	29	0	0.00
2	Rajgangpur	47	0	0.00
3	Rourkela	215	2	0.93
4	Sundargarh	46	0	0.00
Sundargarh District		3,197	198	6.19

Source: OPEPA



Pupil-Teacher Ratio

Pupil-Teacher Ratio (PTR) is an important educational indicator. It is the number of students who attend a school divided by the number of teachers in the school. As per the prescribed norms, PTR for primary and upper primary schools should be at least 40 and 35 respectively. The PTR of 25 students per teacher is desirable. Table 4.13 shows the progress made in Sundargarh district to

improve PTR in primary and upper primary schools from 2006-07 to 2013-14. It may be observed that the PTR in primary schools in the district has improved from about 33 in 2006-07 to about 23 in 2013-14. Similarly, the PTR in upper primary schools has decreased from about 28 in 2006-07 to about 25 in 2013-14. It may be further observed that the district has done consistently better than the State averages for the corresponding values.

Table 4.13: Pupil-Teacher Ratio in Schools of Sundargarh: 2006-07 to 2013-14

Year	Sundargarh		Odisha	
	Primary Schools	Upper Primary Schools	Primary Schools	Upper Primary Schools
2006-07	33.18	28.44	39.61	30.69
2007-08	31.43	25.66	37.10	29.71
2008-09	28.39	22.47	33.59	27.10
2009-10	25.80	26.33	31.38	23.94
2010-11	26.18	28.50	31.73	26.55
2011-12	24.26	20.71	29.43	24.55
2012-13	26.53	19.98	28.36	24.18
2013-14	23.20	24.58	25.76	25.17

Source: OPEPA, 2013-14

Table 4.14 gives the status of Pupil-Teacher Ratio (PTR) in primary and upper primary schools of different blocks and urban local bodies (ULB) in Sundargarh district in 2013-14. For the district as a whole, the PTR at primary level is about 23 and that at upper primary level is 25 as may be observed from Table 4.14. It may also be observed that Subdega and Bargaon and Tangarpali blocks have reported lowest PTR of about 17 (Subdega) and 18 (Bargaon and Tangarpali

blocks) and Koida block has reported comparatively most adverse PTR of 30 in primary schools. At upper primary level, Rajgangpur block reported the highest PTR of about 34 and Bisra block the lowest PTR of about 21. Similarly, Rourkela ULB reported the highest PTR of about 34 and Sundargarh the lowest PTR of about 22 at primary school level. At upper primary level, the highest PTR of 28 was reported by Rajgangpur ULB and the lowest PTR of about 19 by Sundargarh ULB.

Table 4.14: Status of Pupil-Teacher Ratio by Block/ULB in Sundargarh District: 2013-14

SL. No.	Name of Block / ULB	Pupil Teacher Ratio	
		Primary Schools	Upper Primary Schools
Block			
1	Balisankara	19.65	26.82
2	Bargaon	17.64	23.13
3	Bisra	21.07	20.89
4	Bonai	19.92	22.18
5	Gurundia	23.90	23.65
6	Hemgir	19.27	28.37
7	Koira	30.02	25.20
8	Kuarmunda	22.43	26.04
9	Kutra	22.34	26.92
10	Lahunipara	24.87	23.91
11	Lathikata	24.72	25.62
12	Lephripara	18.05	27.07
13	Nuagaon	22.31	30.17
14	Rajgangpur	22.98	33.65
15	Subdega	17.00	29.14
16	Sundargarh	18.69	23.98
17	Tangarpali	17.85	22.60
ULB			
1	Birimitrapur	26.05	21.70
2	Rajgangpur	31.26	28.06
3	Rourkela	34.43	27.70
4	Sundargarh	21.90	18.58
Sundargarh District		23.20	24.58

Source: OPEPA, 2013-14

Status of Trained Teachers in Schools

The quality of education depends amongst other things on well-trained teachers. Teachers need to be well aware of the learning behaviour of very young students and various teaching methods. They should also know what type of educational material is needed and actually available to them. SSA and RTE have prescribed periodic skill training of teachers. During 2013-14, there were 7,981 teachers in different Government primary and upper primary schools in the district. Of them, 967 (12.1 percent) teachers were posted in urban areas and the balance

7,014 (87.9 percent) teachers in rural schools. Out of total 7,981 teachers in different Government schools, 3,689 (46.2 percent) were male and 4,292 (53.8 percent) female teachers. Out of total 7,981 teachers, 6,027 (75.5 percent) teachers (i.e., 74.7 percent male and 76.2 female) were trained in various teaching methodologies. Government has also initiated in-service training programme for teachers, called *Samarthya*. The training comprises both content based and theme based modules. Table 4.15 shows the status of trained teachers in Government schools in different blocks and ULB in Sundargarh district in 2013-14.

Table 4.15: Status of Trained Teachers by Block/ULB in Sundargarh: 2013-14

Sl. No.	Name of Block/ULB	Total Teachers			Total Trained Teachers		
		Male	Female	Total	Male	Female	Total
Block							
1	Balisankara	236	177	413	177	128	305
2	Bargaon	198	185	383	149	154	303
3	Bisra	138	278	416	93	211	304
4	Bonaigarh	259	161	420	212	120	332
5	Gurundia	241	176	417	173	122	295
6	Hemgir	248	185	433	204	149	353
7	Koira	237	191	428	182	140	322
8	Kuarmunda	152	300	452	86	154	240
9	Kutra	116	147	263	69	106	175
10	Lahunipara	341	218	559	243	168	411
11	Lathikata	245	371	616	185	283	468
12	Lephripara	216	190	406	173	166	339
13	Nuagaon	240	245	485	142	109	251
14	Rajgangpur	144	221	365	70	126	196
15	Subdega	134	149	283	114	125	239
16	Sundargarh	190	170	360	166	151	317
17	Tangarpali	142	173	315	127	148	275
ULB							
1	Birimitrapur	23	71	94	18	63	81
2	Rajgangpur	17	95	112	10	83	93
3	Rourkela	155	488	643	143	461	604
4	Sundargarh	17	101	118	19	105	124
Sundargarh District		3,689	4,292	7,981	2,755	3,227	6,027

Source: OPEPA

4.6 Status of Enrollments in Schools

Enrollment Ratios are important indicators to monitor the progress of the 2nd MDG. The State and the district have taken several initiatives to increase the enrollment of students in primary and upper primary schools with a view to achieving the MDG targets. As result, enrollments in primary and

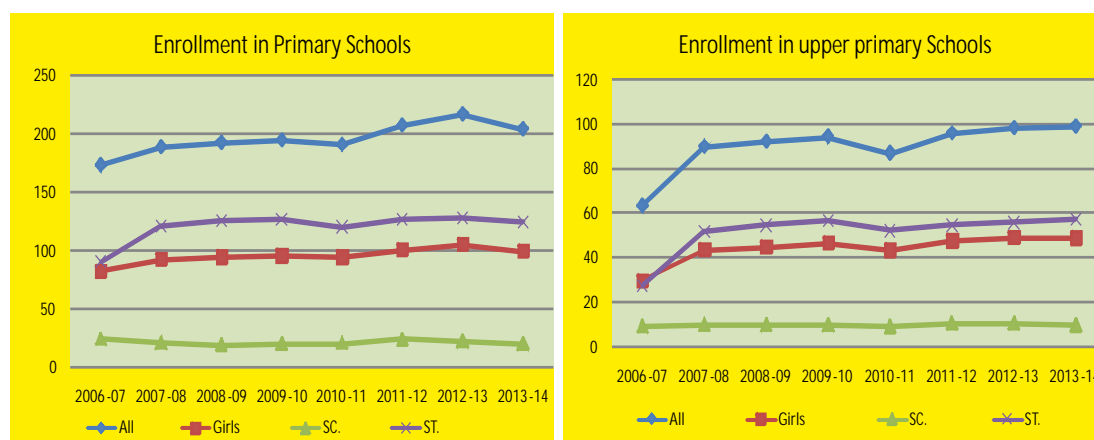
upper primary schools have increased by about 25 percent and 55 percent respectively from 2006-07 to 2012-13. Table 4.16 compares the enrollments of children between 2006-07 and 2012-13 by social classes in the district. Figure 4.1 graphs enrollments in primary and upper primary schools in the district by gender and social classes from 2006-07 to 2013-14.

Table 4.16: Enrollments in Primary/Upper Primary Schools by Gender and Social Classes: 2006-07 to 2012-13

Social groups	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Primary Schools							
Total	173,529	188,716	192,544	194,613	190,733	207,292	216,623
Girls	82,876	92,846	94,551	95,751	94,537	101,033	105,404
SC	24,476	20,979	19,402	20,108	20,933	24,176	22,679
ST	90,139	120,541	125,811	126,330	120,270	127,009	127,899
Upper Primary Schools							
Total	63,408	89,697	91,963	94,060	86,818	95,711	97,995
Girls	29,780	43,794	44,934	46,858	43,534	47,638	49,088
SC	9,215	10,159	9,935	9,845	9,111	10,533	10,589
ST	27,521	51,901	54,481	56,542	52,047	54,475	55,733

Source: OPEPA, 2013-14

Figure 4.1: Enrollments in Primary/Upper primary Schools by Gender and Social Classes: 2006-07 to 2012-13



At primary level, enrollments of girl children increased by 27 percent between 2006-07 and 2012-13 and those for SC children got reduced by 8 percent in 2012-13. There was, however, substantial increase of about 42 percent in enrollments of ST children during the same period. At upper primary level, the enrollments of girl children increased by about 65 percent between 2006-07 and 2012-13 and those for SC children increased by 15

percent in 2012-13. The enrollments for ST children were up by about 103 percent during the same period. As the district is a tribal dominated district and literacy levels for ST communities are generally low, appreciable increase in their enrollments has been an encouraging achievement. This was due to concerted efforts made by the State to promote education among ST children.

Table 4.17: Distribution of Primary Enrollments (Number) by Blocks / ULB, Gender and Social Groups 2010-11

SL. No.	Name of Blocks/ ULB	All Communities			Scheduled Caste			Scheduled Tribe			Minorities		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Block													
1	Balisankara	4935	4895	9830	472	483	955	3811	3501	7312	116	118	234
2	Bargaon	3809	3794	7603	475	409	884	2489	2330	4819	6	8	14
3	Bisra	4811	4781	9592	410	402	812	2978	2956	5445	277	281	558
4	Bonai	3804	3859	7663	385	401	786	2676	2475	5453	46	28	74
5	Gurundia	4560	4149	8709	321	311	632	3397	3321	5997	13	3	16
6	Hemgir	4339	4165	8504	724	619	1343	2136	2004	5401	63	140	203
7	Koira	5903	5875	11778	517	519	1036	4567	4407	6543	37	33	70
8	kuarmunda	5916	5817	11733	441	423	864	4915	4895	9462	34	29	63
9	Kutra	4937	4908	9845	425	448	873	3692	3613	8528	127	138	265
10	Lahunipara	5917	5811	11728	427	419	846	4692	4503	8195	19	19	38
11	Lathikata	6830	6747	13577	456	450	906	4602	4581	9273	60	42	102
12	Lephripa	3931	3838	7769	455	439	894	2693	2566	7168	1	2	3
13	Nuagaon	6665	6403	13068	481	475	956	4575	4436	7129	72	86	158
14	Rajgangpur	6042	5955	11997	472	481	953	4465	4349	8924	29	22	51
15	Subdega	3236	3109	6345	361	355	716	2499	2390	6855	35	33	68
16	Sundargarh	3450	3397	6847	480	491	971	1725	1677	4176	0	0	0
17	Tangarpali	2949	2833	5782	482	417	899	1583	1672	3397	0	0	0
ULB													
1	Birimitrapur	1910	1838	3748	410	412	822	606	543	1149	108	81	189
2	Rajgangpur	1986	1828	3814	339	352	691	673	686	1359	88	108	196
3	Rourkela	7893	8274	16167	1849	1857	3706	1948	1800	3748	195	188	383
4	Sundargarh	2373	2261	4634	191	197	388	426	417	843	74	130	204
Sundargarh Dist.		96196	94537	190733	10573	10360	20933	61148	59122	120270	1400	1489	2889

Source: OPEPA 2011-12

Distribution of number of enrollments by gender and social classes in primary schools in different blocks and ULB for the year 2010-11 is given in Table 4.17. Similarly, distribution of number of enrollments by gender and social classes in upper primary schools in different blocks and ULB for the year 2010-11 is given in Table 4.18. It may be

observed from Table 4.17 and 4.18 that the enrollments of tribal children both girls and boys have been highest at primary and upper primary levels. This is expected to be so because of majority of tribals in the district. This also indicates the encouraging responses of the State's concerted efforts to improve literacy levels among ST communities.

Table 4.18: Distribution of Upper Primary Enrollments (Number) by Blocks/ULB, Gender and Social Groups: 2010-11

SL. No.	Name of Blocks/ULB	All Communities			Scheduled Caste			Scheduled Tribe			Minorities		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Block													
1	Balisankara	2708	2687	5395	210	200	410	1647	1518	3165	47	54	101
2	Bargaon	2389	2216	4605	122	151	273	1614	1559	3173	2	0	2
3	Bisra	2025	1976	4001	135	127	262	1315	1278	2593	179	150	329
4	Bonai	2204	2177	4381	238	257	495	1213	1217	2430	20	32	52
5	Gurundia	1859	1741	3600	113	140	253	1376	1358	2734	2	3	5
6	Hemgir	2684	2689	5373	317	293	610	1378	1217	2595	13	34	47
7	Koira	1838	1796	3634	115	82	197	1334	1086	2420	17	14	31
8	kuarmunda	2663	2610	5273	252	164	416	1758	1949	3707	5	9	14
9	Kutra	2402	2369	4771	215	154	369	1660	1690	3350	74	65	139
10	Lahunipara	2221	2188	4409	239	157	396	1603	1520	3123	20	18	38
11	Lathikata	2340	2454	4794	254	236	490	1694	1678	3372	39	36	75
12	Lephripara	2422	2356	4778	251	290	541	1403	1376	2779	3	5	8
13	Nuagaon	2528	2498	5026	302	203	505	1439	1550	2989	40	41	81
14	Rajgangpur	2073	1930	4003	280	169	449	1670	1549	3219	10	6	16
15	Subdega	1941	1802	3743	231	185	416	1407	1307	2714	15	12	27
16	Sundargarh	1853	1976	3829	304	255	559	1029	1062	2091	0	0	0
17	Tangarpali	1323	1306	2629	249	224	473	796	743	1539	1	0	1
ULB													
1	Birimitrapur	676	771	1447	173	134	307	331	364	695	34	48	82
2	Rajgangpur	887	1240	2127	103	142	245	385	642	1027	42	66	108
3	Rourkela	3458	3788	7246	595	664	1259	737	773	1510	89	66	155
4	Sundargarh	790	964	1754	91	95	186	364	458	822	39	58	97
Sundargarh Dist.		43284	43534	86818	4789	4322	9111	26153	25894	52047	691	717	1408

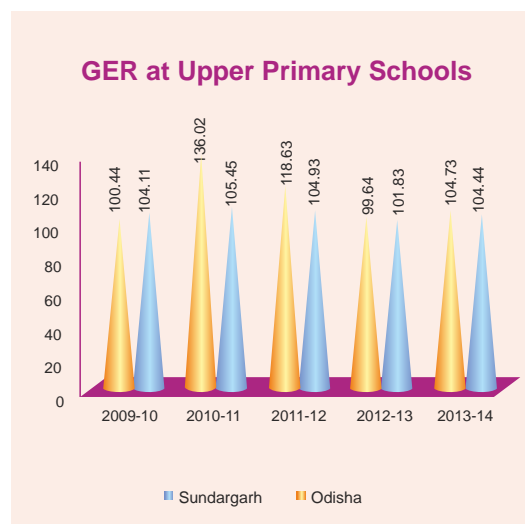
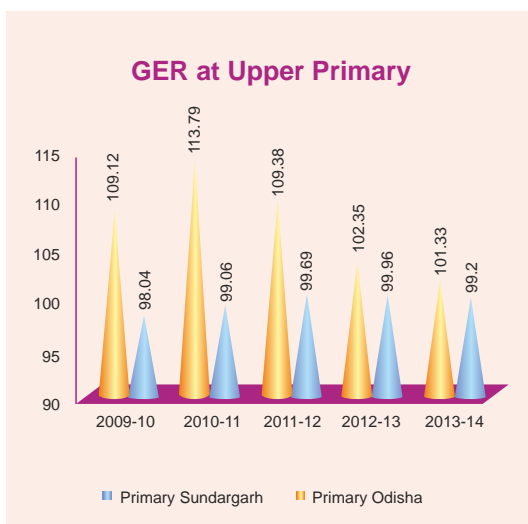
Source: OPEPA, 2011-12

Gross Enrollment Ratio

Gross Enrollment Ratio (GER) for primary level is the ratio of total enrolled children in class I-V to total child population in 6-11 year age group. The GER at primary level has varied from about 109 percent in 2009-10 to about 101 percent in 2013-14 and at upper primary level from about 136 percent in 2010-11 to about 100 percent in 2012-13 in the district. The combined GER varied from about 125 percent in 2010-11 to 101 percent in 2012-13. The district has generally

reported higher GER than Odisha. Figure 4.2 compares GER for Sundargarh and Odisha at primary and upper primary levels from 2009-10 to 2013-14. The GER for SC and ST students was 97.21 percent and 101.40 percent at primary level and at upper primary level 120.69 percent and 100.12 percent respectively in the district in 2013-14. The combined GER for SC and ST communities has been reported as 103.75 percent and 101.00 percent respectively.

Figure 4.2: Comparison of GER at Primary and Upper Primary Levels in Sundargarh and Odisha: 2009-10 to 2013-14



Net Enrollment Ratio

Net Enrollment Ratio for primary level is the ratio of total enrolled children in class I-V in 6-11 year age group to total child population in 6-11 year age group. The average NER at primary level (6-11 year age group) in Sundargarh district has been of the order of 98 between 2009-10 and 2013-14. The NER at upper primary level (11-14 year age group) has varied from about 81 percent in 2009-10 to about 99 percent in 2011-12 in the district. The combined NER in the 6-14 year age group has varied from about 89 percent in 2009-10 to about 99 percent in 2011-12 in the district. Table 4.19 compares NER for Sundargarh and Odisha at primary and upper primary levels from 2009-10 to 2013-14.

The NER for Scheduled Caste communities at primary level was 94.50 percent and at upper primary level 94.27 percent for the district in 2013-14 and for Scheduled Tribe communities at primary level 98.57 percent and at upper primary level 82.42 percent for the district in 2013-14. Higher NER for ST children at primary level than those of general categories and SC categories appears to be the result of special focus given by the State to substantially improve literacy levels for ST males and females. There is, however, need to improve the conditions at upper primary level. Table 4.20 compares NER at primary and upper primary levels for all, SC and ST communities in different blocks and ULB in the district for the year 2013-14.

Table 4.19: Comparison of NER at Primary/Upper Primary Levels in Sundargarh and Odisha: 2009-10 to 2013-14

Year	Sundargarh			Odisha		
	Primary (6-11 year)	Upper Primary (11-14 year)	Total (6-14 year)	Primary (6-11 year)	Upper Primary (11-14 year)	Total (6-14 year)
2009-10	96.49	81.08	88.78	92.88	85.68	91.29
2010-11	98.75	97.60	98.18	91.83	83.84	90.78
2011-12	99.32	99.08	99.20	93.30	93.24	93.27
2012-13	97.38	78.11	91.08	93.61	91.57	92.65
2013-14	98.00	87.64	94.70	93.85	91.38	93.09

Source: OPEPA, 2013-14

Table 4.20: Comparison of NER by Blocks / ULB and Social Groups in Sundargarh: 2013-14

SL. No.	Name of Block/ULB	All Communities			Scheduled Castes			Scheduled Tribes		
		Primary	Upper Primary	Total	Primary	Upper Primary	Total	Primary	Upper Primary	Total
Block										
1	Balisankara	95.14	89.60	92.37	100.00	100.00	100.00	99.98	99.91	99.95
2	Bargaon	93.25	96.21	94.73	100.00	100.00	100.00	100.00	100.00	100.00
3	Bisra	87.71	98.34	93.03	98.74	92.59	98.17	99.56	98.30	98.93
4	Bonai	94.42	93.82	94.12	100.00	100.00	100.00	100.00	100.00	100.00
5	Gurundia	97.02	85.84	91.43	100.00	100.00	100.00	99.85	98.30	99.32
6	Hemgir	91.02	98.81	94.91	100.00	100.00	100.00	100.00	100.00	100.00
7	Koira	97.59	83.97	90.78	100.00	100.00	100.00	99.99	99.90	99.95
8	Kuarmunda	98.00	97.90	97.95	100.00	100.00	100.00	99.83	99.12	99.48
9	Kutra	89.74	96.41	93.07	100.00	100.00	100.00	100.00	100.00	100.00
10	Lahunipara	96.03	84.58	90.30	100.00	100.00	100.00	100.00	100.00	99.40
11	Lathikata	92.71	93.84	93.28	99.89	99.01	99.44	99.77	99.04	96.86
12	Lephripa	95.52	96.32	95.92	97.35	94.47	96.90	97.23	96.50	94.32
13	Nuagaon	100.00	100.00	100.00	94.81	93.93	94.36	94.69	93.96	91.78
14	Rajgangpur	92.85	92.04	92.45	92.27	91.39	91.82	92.15	91.42	99.90
15	Subdega	91.47	89.92	90.70	100.00	100.00	100.00	99.98	100.00	100.00
16	Sundargarh	87.49	99.81	93.65	100.00	100.00	100.00	100.00	100.00	100.00
17	Tangarpali	92.49	97.34	94.91	100.00	100.00	100.00	100.00	100.00	100.00
ULB										
1	Birimitrapur	91.37	91.22	91.29	99.77	98.62	99.20	97.84	90.56	94.20
2	Rajgangpur	92.00	94.54	93.27	89.73	88.85	89.28	89.61	88.88	89.24
3	Rourkela	86.79	99.88	93.34	87.19	86.31	86.74	87.07	86.34	86.70
4	Sundargarh	88.49	96.47	92.48	100.00	100.00	100.00	100.00	100.00	100.00
Sundargarh District		98.00	87.64	94.70	94.50	94.27	94.43	98.57	82.42	93.44

Source: OPEPA, 2013-14

Retention, Transition and Repetition Rates

Improving GER and NER is only the first stage in sending students both girls and boys of all communities to school. However, how many enrolled students have been retained in schools and how many have dropped out are other challenges that need to be tackled. It is equally important that out of school children are also sent to schools to complete at least elementary level (i.e., 8 years in 6-14 year age group) schooling. The district has made progress on all these counts.

The retention rate at primary school level has improved from 43.20 percent in 2006-07 to 73.50 percent in 2010-11 in the district. The

girls have been doing better than boys in this regard. The retention rate for girls was 74.4 percent against 72.69 percent for boys at primary school level in the district in 2010-11. At upper primary level, the retention rate for girls was still better at 89.52 percent against 82.80 percent for boys in the district in 2010-11. There is, however, substantial scope to further improve the situation. The transition rate from primary schools to upper primary schools has also improved considerably from 60.30 percent in 2006-07 to 95.70 percent in 2011-12 in the district.

Repetition rate in specific age group refers to proportion of pupils from a cohort enrolled in a given grade in a school year, who study in

Table 4.21: Repetition Rates by Age Group and Block/ULB in Sundargarh: 2010-11

SL. No.	Name of Block /ULB	Repetition Rate (percent)	
		Children in 6-11 Year Age Group	Children of 11-14 Year Age Group
Block			
1	Balisankara	6.24	5.09
2	Bargaon	1.72	2.45
3	Bisra	4.34	4.08
4	Bonai	3.24	2.82
5	Gurundia	9.89	7.63
6	Hemgiri	0.53	1.13
7	Koira	9.85	8.30
8	Kuarmunda	4.59	5.59
9	Kutra	4.26	4.28
10	Lahunipara	3.05	2.55
11	Lathikata	1.95	2.98
12	Lephipara	1.79	1.66
13	Nuagaon	5.59	5.46
14	Rajgangpur	5.74	6.23
15	Subdega	3.41	3.84
16	Sundargarh	2.95	2.42
17	Tangarpali	2.60	2.13
ULB			
1	Birimitrapur	2.72	2.31
2	Rajgangpur	4.33	5.18
3	Rourkela	6.74	6.84
4	Sundargarh	1.41	1.24
Sundargarh District		4.14	4.01

Source: OPEPA, District Annual Action Plan and Budget, 2011-12

the same grade in the following school year. A measure of the repetition rate is to assess the performance of pupils of a cohort and internal efficiency of the school system. The district reported the repetition rate of 4.14 percent in the age group of 6-11 year (primary level) and 4.01 percent in the age group of 11-14 year (upper primary level) in 2010-11. Table 4.21 compares repetition rates by block and ULB in the district in the age group of 6-14 year and 11-14 year for the year 2010-11. It may be observed that repetition rates in some blocks and ULB are very high and need to be reduced. Several steps have been taken to reduce repetition rates, particularly in DPEP districts. These steps include: (i) continuous evaluation and provision of remedial teaching in schools where repetition is high, (ii) provision of special coaching during holidays to such children who are prone to repeat, (iii) involvement of parents / community members to improve the progress of the children in difficult areas, and (iv) organization of one-month special summer camps for repeaters at the block and cluster levels.

Dropout Rates

Dropout rates at primary and upper primary that were generally high some year back have continuously come down in the district in recent years. Table 4.22 compares dropout

rates of Sundargarh district with those in Odisha by social categories from 2009-10 to 2012-13. It may be observed that the dropout rates at primary level (6-11 year age group) have declined from 2.31 percent in 2009-10 to 0.70 percent in 2012-13 for all communities and those for girls have come down from 2.18 percent in 2009-10 to 0.60 percent in 2012-13. However, dropout rates for SC and ST categories have remained high. The dropout rates for SC and ST categories were 3.52 percent and 4.49 percent respectively in 2009-10 and 7.95 percent and 5.26 percent respectively in 2012-13 in the district. Table 4.23 compares dropout rates at primary and upper primary levels by gender and by blocks / ULB for the year 2013-14.

The dropout rates at upper primary level (11-14 year age group) have declined from 3.78 percent in 2009-10 to 0.64 percent in 2012-13 for all communities and those for girls have come down from 1.6 percent in 2009-10 to 0.65 percent in 2012-13. The dropout rates for SC and ST categories have also remained high at upper primary level. The dropout rates for SC and ST categories were 5.83 percent and 8.14 percent respectively in 2009-10 and 8.13 percent and 4.21 percent respectively in 2012-13 in the district. Dropout rates for the district were higher than those for Odisha at primary level and lower than Odisha at upper primary level.

Table 4.22: Comparison of Dropout Rates by Social Groups in Sundargarh District and Odisha: 2009-10 to 2012-13

Social Categories	Sundargarh				Odisha			
	2009-10	2010-11	2011-12	2012-13	2009-10	2010-11	2011-12	2012-13
Primary Level (6-11 Year Age Group)								
All Community	2.31	2.08	0.30	0.70	2.83	2.60	0.43	0.40
SC	3.52	2.23	9.44	7.95	4.21	3.38	2.41	2.39
ST	4.49	2.29	5.70	5.26	6.46	4.85	3.10	2.97
Girls	2.18	1.93	0.00	0.60	3.10	2.86	0.62	0.20
Upper Primary Level (11-14 Year Age Group)								
All Community	3.78	2.22	0.32	0.64	8.19	2.23	3.07	2.36
SC	5.83	2.87	8.11	8.13	8.42	6.21	2.74	2.41
ST	8.14	6.16	4.7	4.21	9.72	7.85	4.7	3.38
Girls	1.6	0.14	0.14	0.65	8.24	7.31	2.23	2.38

Source: OPEPA, 2013-14

Table 4.23: Comparison of Dropout Rates for Primary/Upper Primary Levels by Gender and Blocks/ ULB: 2013-14

Sl. No.	Name of Block/ULB	Primary Level (percent)			Upper Primary Level (percent)		
		Boys	Girls	Total	Boys	Girls	Total
Block							
1	Balisankara	0.00	0.00	0.00	5.46	1.63	3.54
2	Bargaon	1.04	1.54	1.28	5.56	4.54	5.05
3	Bisra	1.96	2.15	2.06	5.85	7.72	6.81
4	Bonaigarh	0.46	1.16	0.82	2.86	3.17	0.15
5	Gurundia	0.55	0.72	0.63	7.78	0.00	0.00
6	Hemgir	0.00	0.00	0.00	1.85	6.11	4.01
7	Koira	0.00	0.00	0.00	0.00	3.81	1.88
8	Kuarmunda	0.85	0.32	0.58	0.00	0.00	0.00
9	Kutra	0.85	0.20	0.53	2.81	1.08	1.99
10	Lahunipara	0.99	0.00	0.45	0.00	0.00	0.00
11	Lathikata	0.48	0.40	0.45	0.00	0.00	0.00
12	Lephripara	0.34	0.00	0.01	0.00	0.00	0.00
13	Nuagaon	0.87	0.00	0.44	2.44	0.00	0.00
14	Rajgangpur	0.00	0.00	0.00	0.00	4.62	1.56
15	Subdega	1.91	1.08	1.50	0.00	1.61	0.00
16	Sundargarh	0.00	0.00	0.00	1.05	0.00	0.00
17	Tangarpali	2.85	6.67	4.77	7.90	6.84	7.37
ULB							
1	Birimtrapur	0.00	3.45	1.15	0.00	0.00	0.00
2	Rajgangpur	1.70	0.00	0.51	0.07	1.80	1.03
3	Rourkela	0.68	0.00	0.00	5.56	2.17	3.99
4	Sundargarh	0.29	0.00	0.00	3.03	3.67	3.38
Sundargarh District		0.00	0.00	0.00	2.03	1.39	1.71

Source: OPEPA

Out of School Children

Out of school children include dropouts from schools and those who have never enrolled in schools. As the State has taken several initiatives to encourage children to attend schools, the number of out of school children has been declining over the years. In 2008-09, there were 9,651 out of school children in 6-14 year age group (i.e., 6,730 in the age group 6-11 year and 2,921 in 11-14 year age group). Out of school children in 2013-14 got reduced to just 373 in 6-14 year age group, that is only 147 in 6-11 year age group and 226 in 11-14 year age group.

Table 4.24 summarises the status of out of school children in Sundargarh district and

Odisha from 2008-09 to 2013-14. The status of out of school children in different blocks and urban local bodies is given in Annexure 4.1 for the years from 2011-12 to 2013-14. Some of the reasons that cause children to remain out of school include: poverty, lack of interest in education of illiterate parents and engagement of children in domestic work as well as engagement outside home as child labour.

4.7 Conclusion

The district has made considerable progress in spreading education since 1951. Several Central and State programmes have been implemented by the district to promote education for all social groups, particularly for

Table 4.24: Status of Out of School Children in Sundargarh & Odisha: 2008-09 to 2013-14

Year	Sex	Sundargarh			Odisha		
		6-11 yrs	11-14 yrs	6-14 yrs	6-11 yrs	11-14 yrs	6-14 yrs
2008-09	Boys	4,943	1,582	6,525	79060	57,279	1,36,339
	Girls	1,787	1,339	3,126	75,074	59,370	1,34,444
	Total	6,730	2,921	9,651	1,54,134	1,16,649	2,70,783
2009-10	Boys	3,559	1,139	4,698	52,156	40,506	92,662
	Girls	1,287	964	2,251	51,884	42,292	94,176
	Total	4,846	2,103	6,949	1,04,040	82,798	1,86,838
2010-11	Boys	1,166	802	1,968	22,246	14,824	37,070
	Girls	927	728	1,655	21,578	13,400	3,49,978
	Total	2,093	1,530	3,623	43,824	28,224	72,074
2011-12	Boys	678	396	1,074	8,668	6,790	15,458
	Girls	609	345	954	8,202	6,931	15,133
	Total	1,287	741	2,028	16,870	13,721	30,591
2012-13	Boys	348	390	738	5,484	4,746	10,230
	Girls	253	360	613	4,964	4,397	9,361
	Total	601	750	1,351	10,448	9,143	19,591
2013-14	Boys	95	148	243	1,803	1,381	3,184
	Girls	52	78	130	1,575	1,242	2,817
	Total	147	226	373	3,378	2,623	6,001

Source: OPEPA, 2013-14

girls and tribal children. These programmes include *Sarva Shiksha Abhiyan* District Primary Education Programme National Programme for Education of Girls at Elementary Level (NPEGEL), *Kasturba Gandhi Balika Vidyalaya* and Mid-Day-Meal programme. The district has made sustained efforts to improve literacy of female and marginalised groups, particularly SC and ST communities. Girls have been generally doing better than boys among all groups.

The literacy levels have risen more than 6 times from 11.8 percent in 1951 to 73.3 percent in 2011. The male literacy rates have increased by 45.9 percentage points from 35.1 percent in 1961 to 81.0 percent in 2011 and the female literacy rates have risen by 56.0 percentage points from mere 9.5 percent in 1961 to 65.5 percent in 2011. While the rural literacy rates have increased from 26.8 percent in 1981 to 66.6 percent in 2011, the urban literacy rates have risen from 57.4 percent in 1981 to 85.3 percent in 2011. The literacy rates for SC communities have gone up by 27 percentage points from 43.9 percent

in 1991 to 70.9 percent in 2011 and those for ST communities are up by 27.8 percentage points from 37.3 percent in 1991 to 65.1 percent in 2011. It is, however, a matter of serious concern that the literacy rates for minorities are very low, only 35.5 percent with the male literacy rate of 41.3 percent and the female literacy rate of 29.6 percent in 2011. The gender gap in literacy rates has come down from 25.6 percentage points in 1961 to 15.5 percentage points in 2011. The gap in rural and urban literacy rates has also decreased from 30.6 percentage points in 1981 to 18.7 percentage points in 2011. There is still a gap of 2.4 percentage points for SC communities and 8.2 percentage points for ST communities as compared to overall literacy rates in 2011. Despite these impressive achievements, there are still regional, social and gender disparities as regards literacy rates in the district. These disparities need be addressed as early as possible. The district is yet to achieve the objective of universal literacy among all groups including women and marginal groups.

The school infrastructure has been substantially improved since 1947-48. There were only 200 schools including 181 primary schools in 1947-48. The number of schools has been substantially increased to 3,197 including 1,839 primary schools and 905 upper primary schools. About 82.5 percent schools have been created and run by the State Government and additional 8.9 percent aided by Government. Only 339 habitations are without schools. There is a need to create school facilities in these habitations. Several schools still lack facilities. About 1,420 schools do not have separate boys' toilets; 53 schools are without girls' toilets; 1,956 schools are without electricity and 1,933 schools have no play grounds. Twenty-three (23) schools have no buildings; 1,516 schools have no kitchen sheds and 912 schools are without boundary walls. About 140 schools (i.e., 4.38 percent) are single classroom schools and need to have more class rooms. All schools are required to have prescribed facilities in schools in a time bound manner.

The district has at present 7,981 teachers of which male teachers are 3,689 (46.2 percent) and female teachers 4,292 (53.8 percent). Out of them, 7,014 teachers are posted in rural areas and the rest 967 in urban areas. In all, 6,027 teachers (775.5 percent) are trained teachers and the rest need to be trained as soon as possible. The pupil-teacher ratio (PTR) for primary schools is about 23 and for upper primary schools about 25 in the district. This is better than the State average of about 26 at primary school level and 25 at upper primary school level. It is, however, a matter of concern that 198 schools (i.e. 6.19 percent) are still single teacher schools. These schools need to have prescribed number of teachers as soon as possible.

The number of enrolments both at primary (6-11 year age group) and upper primary levels (11-14 year age group) in the district has been rising over the years. However, the rate of growth in enrolments has slowed down in

recent years. For example, the overall GER (6-14 year age group) that was 124.91 percent in 2010-11 has come down to 102.41 percent in 2013-14. The overall NER (6-14 year age group) that was 99.20 percent in 2011-12 has slowed down to 94.70 percent in 2013-14. The retention rate that was only 43.20 percent in 2006-07 has gone up to 80.40 percent in 2011-12. The transition rate that was 60.3 percent in 2006-07 has increased 95.7 percent in 2011-12. Out of school children have got reduced from 9,651 (6-14 year age group) to only 373 in 2013-14. The drop out rates have also decreased very substantially except for SC and ST communities for which such rates are still very high. The repetition rate was only 4.14 percent at primary level (6-11 year age group) and 4.01 percent at upper primary level (11-14 year age group) in the district in 2010-11. There is a pressing need to enhance enrollment rates both at primary and upper primary levels. The momentum that was gathered by the end of the last decade needs to be maintained. Efforts are also needed to achieve the policy objective of universal elementary education and to enhance the quality of education.

The performance of the district has been better than the State average. The district has been progressively marching towards achieving the mandate of the 2nd MDG. The NER for the year 2011-12 was 99.20 percent in 6-14 year age group. This tempo has recently slowed down. The NER got reduced to 91.08 percent in 2012-13 and increased again to 94.70 percent in 2013-14. There is a need to continuously strive to achieve 100 percent NER. As reported earlier, the transition rate that was 60.3 percent in 2006-07 has increased 95.7 percent in 2011-12. About 96 percent of the enrolled children in 6-14 year age group have completed elementary education from Grade I to VIII in 2010-11 in the district. The district reported the literacy rates of 65.5 percent for women and 81 percent for men, the overall literacy rate being 73.3 percent as per the 2011 census.







CHAPTER 5

Gender Issue

“Different though the sexes are, they inter-mix. In every human being a vacillation from one sex to the other takes place, and often it is only the clothes that keep the male or female likeness, while underneath the sex is very opposite of what it is above. ”

-Virginia Woolf

Gender Issue

5.1 Introduction

Gender is a complex social construct based on biology. The manifested differences between men and women, which the concept “gender” signifies, are culture-specific. In addition to having a socio-cultural base, “gender” also has psychological underpinnings. In several societies, women have faced, and continue to face, disadvantages in many respects. The situation has, however, improved in recent years. In order to address issues pertaining to gender disparities, the United Nations Millennium Summit 2000 assigned the third Millennium

Development Goal (MDG) to address gender issues and aimed at promoting gender equality and empowering women. The following quantifiable targets and monitorable indicators were also specified to track the progress on the MDG-3. This chapter examines gender aspects in specific sectors in the district and describes efforts made by Government and non-Government organisations to address gender issues. Though, gender issues are equally relevant to both males and females, contextual analysis for both is essential.

Box 5.1 Millennium Development Goal 3

Promoting gender equality and empowerment of women

Indicators

Target 3a: Eliminate gender disparity in primary and secondary education preferably by 2005, and at all levels by 2015

- 3.1 Ratios of girls to boys in primary, secondary and tertiary education
- 3.2 Share of women in wage employment in the non-agricultural sector
- 3.3 Proportion of seats held by women in national parliament.

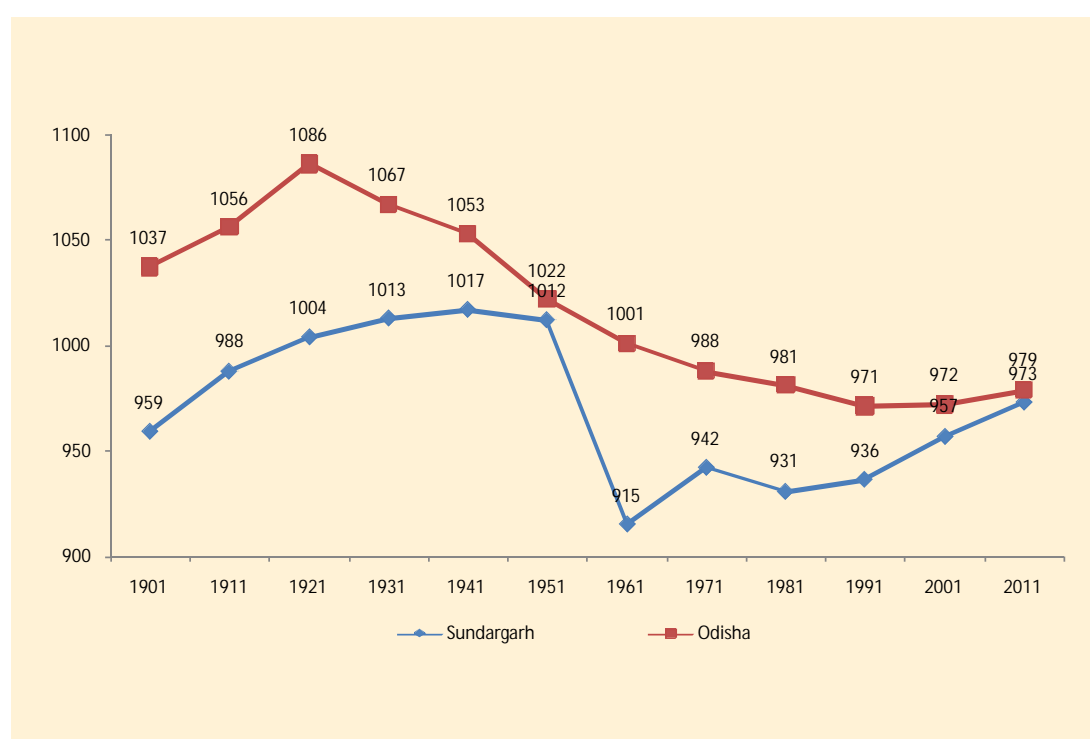
5.2 Disparities in Population

The sex ratio is an important indicator of gender issues. Sex ratio is the number of females per 1,000 males. In Sundargarh district, it was more favourable for females between 1901 and 1941. The sex ratio declined sharply from 1,012 in 1951 to 915 in 1961. The sex ratio shows a fluctuating trend from 1951 to 1981. However, the sex ratio improved gradually from 931 in 1981 to 973 in 2011 as may be observed from Chart 5.1.

As per 2011 census, the sex ratio in rural areas

was 1,005, while in urban areas it was 917. It indicates that the sex ratio is higher in rural areas than in urban areas in the district. The sex ratio among Scheduled Castes and Scheduled Tribes in rural areas is still better as compared to urban areas in the district. Similar trends have been observed in the State. Table 5.1 analyses the status of sex ratio by rural and urban areas by social group and for the 0-6 year age group in the district as well as in Odisha as per 2011 census.

Chart 5.1: Sex Ratio in Sundargarh District and Odisha, 1901-2011



Source: Census of India, 1970-2011

Table 5.1: Status of Sex Ratio in Sundargarh District, 2011

Social Groups	Sundargarh			Odisha		
	Total	Rural	Urban	Total	Rural	Urban
All communities	973	1,005	917	979	989	932
Child Sex Ratio (0-6 Years)	946	966	903	941	946	913
Scheduled Castes	987	1,006	959	987	988	979
Scheduled Tribes	1,016	1,018	1,009	1,029	1,031	991

Source: Census of India, 2011

Table 5.2: Block and Urban Areas-wise Sex Ratio by Social Groups in Sundargarh District, 2001

S. No.	Name of Block/ULB	Sex Ratio		
		All	SC	ST
Block				
1	Balisankara	1,028	1,002	1,038
2	Bargaon	994	989	1,010
3	Bisra	965	960	994
4	Bonaigarh	990	1,048	998
5	Gurundia	1,002	1,036	1,002
6	Hemagiri	970	996	981
7	Koida	957	970	979
8	Kuanarmunda	990	1,012	997
9	Kutra	999	984	1,009
10	Lahunipada	1,003	1,022	1,008
11	Lathikata	944	972	991
12	Lephripada	987	984	1,002
13	Nuagaon	1,000	1,004	1,015
14	Rajgangpur	1,000	1,008	1,011
15	Subdega	1,011	1,021	1,030
16	Sundargarh	991	964	1,010
17	Tangarpalli	991	995	983
ULB				
1	Biramitrapur	971	1,004	1,042
2	Rajgangpur	941	942	1,123
3	Rourkela	872	931	954
4	Sundargarh	950	990	1,061
Sundargarh District		957	980	1,003

Source: Census of India 2001

Block-wise information has not been available for SC and ST groups for 2011 census. However, block-wise analysis carried out based on 2001 census has been given in Table 5.2. The sex ratio is observed to be more than 1,000 females in Balisankara (1,028), Subdega (1,011), Lahunipada (1,003) and Gurundia (1,002) blocks. Among all the blocks, lowest sex ratio has been observed in Lathikata (944), followed by Koida (957). In urban areas, the highest sex ratio was observed in Biramitrapur (971) and lowest in Rourkela (872). Among Scheduled Castes and Scheduled Tribes, the sex ratio was observed more than 1,000 females in eight blocks and ten blocks of the district respectively. In urban areas, highest sex ratio among SC was observed to be in Biramitrapur (1,004), whereas among ST, it was highest in Sundargarh (1,061).

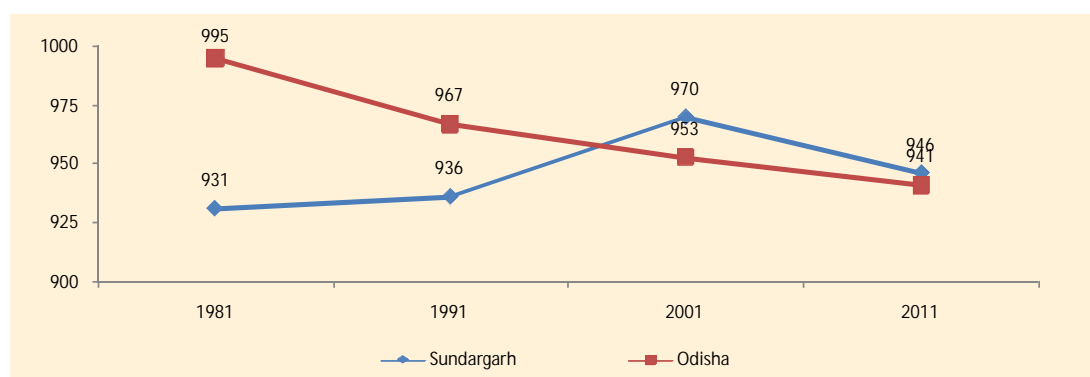
The female child population in the district is

comparatively less than that of the male child population as per 2011 census. The female child population to the total child population in 0-6 year age group is 48.6 percent and the male child population 51.4 percent. According to 2011 census, the child sex ratio of Sundargarh district at 946 girls per 1,000 boys, was marginally higher than the State average of 941. The child sex ratio in rural areas at 966 was higher than that in urban areas at 903 in the district. Chart 5.2 compares child sex ratio in Sundargarh and Odisha from 1981 to 2011. If the same trend continues in future, it may create an imbalance in the gender composition of the district.

5.3 Disparities in Education

There is a considerable gender gap in literacy levels of males and females. The literacy rates in the district have made significant progress in the past twenty years from 53.0 percent in

Chart 5.2: Child Sex Ratio in Sundargarh District and Odisha, 1981-2011



Source: Census of India, 1981-2011

1991 to 73.3 percent in 2011. About three-fourths (73.3 percent) of population are literate in the district as per 2011. However, the male literacy rate at 81.0 percent is much higher than the female literacy rate of 65.5 percent as per 2011 census. There is a gap of 15.5 percentage points in literacy rates of male and female in the district. Table 5.3 compares male and female literacy rates in the district over a period of 30 years from 1991 to 2011. Several observations are in order. The female literacy has increased by 25.9 percentage points from 39.6 percent in 1991 to 65.5 percent in 2011, whereas the male literacy has increased only by 15.6 percentage points from 65.4 percent in 1991 to 81.0 percent in 2011. Higher growth of the female literacy as compared to the male literacy indicates that the gender gap in literacy has been declining over the years. The gender gap in literacy has in fact come down from 25.8 percentage points in 1991 to 15.5 percentage

points in 2011. The rural female literacy rate has increased by 30.0 percentage points from 27.7 percent in 1991 to 57.7 percent in 2011. Similarly, the urban female literacy rates have increased by 15.1 percentage points from 64.9 percent in 1991 to 80.0 percent in 2011. This indicates that there is still a significant gap in rural and urban female literacy rates. The gender gap in literacy in rural areas has decreased from 27.6 percentage points in 1991 to 17.9 percentage points in 2011. In urban areas, the gender gap in literacy has come down from 18.4 percentage points in 1991 to 10.2 percentage points in 2011. The gender disparity in literacy rates is 0.24 in the district. Gender disparity in rural areas at 0.31 is higher than that in urban areas at 0.13 as per 2011 census. The gender disparities in literacy have been reduced substantially from 0.65 in 1991 to 0.24 in 2011 in the district. Table 5.3 and Chart 5.3 analyses gender gaps in literacy in rural and urban areas from 1991 to 2011.

Table 5.3: Literacy Rate by Place of Residence in Sundargarh District, 1991 to 2011

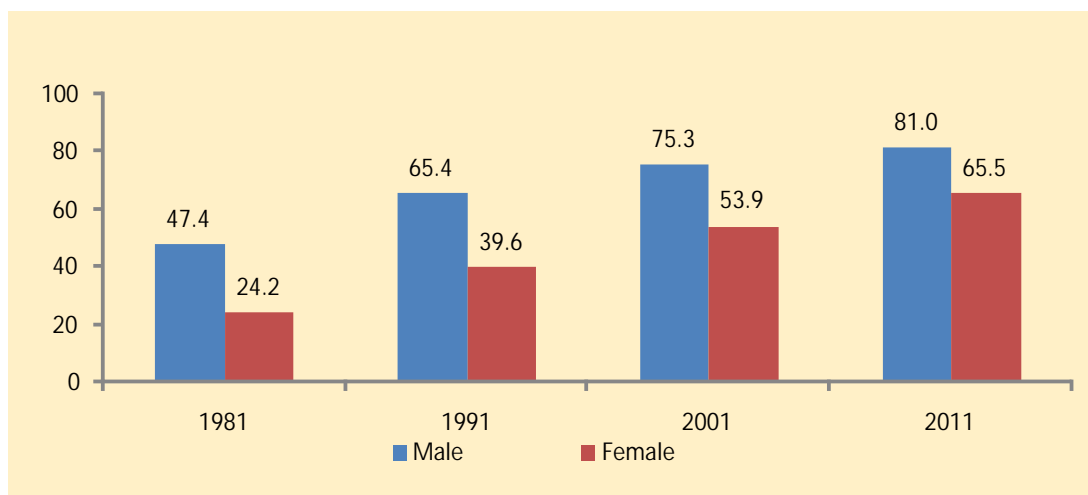
Rural/Urban/Total	Persons	Males	Females	Gender Disparity
1991				
Rural	41.6	55.3	27.7	0.99
Urban	75.0	83.3	64.9	0.28
Total	53.0	65.4	39.6	0.65
2001				
Rural	55.3	67.4	43.1	0.56
Urban	82.5	89.0	75.0	0.19
Total	64.9	75.3	53.9	0.40
2011				
Rural	66.6	75.6	57.7	0.31
Urban	85.3	90.2	80.0	0.13
Total	73.3	81.0	65.5	0.24

Source: Census of India, 1991, 2001, and 2011

Disparity between the males and females literacy levels varies widely across blocks and ULB as indicated in the Table 5.4. In 2001, gender disparity in literacy was highest (0.96) in Koida block followed by Gurundia (0.77), Bonaigarh (0.75), and Nuagaon (0.65) blocks.

Blocks with less gender disparity in literacy were Lephripara (0.45), Bisra (0.46), Lathikata (0.46), and Kutra (0.46) blocks. In urban areas, the gender disparity in literacy was highest in Biramitrapur (0.30) and lowest in Sundargarh (-0.30).

Chart 5.3: Status of Literacy Rate in Sundargarh District, 1981 to 2011



Source: Census of India, 1981-2011

Table 5.4: Gender Disparity in Literacy in Sundargarh District, 2001

Sl. No.	Name of Block / ULB	Persons	Males	Females	Gender
Block					
1	Balisankara	58.3	70.6	46.3	0.52
2	Bargaon	60.4	72.2	48.6	0.49
3	Bisra	62.7	74.2	50.7	0.46
4	Bonaigarh	43.0	54.7	31.3	0.75
5	Gurundia	48.3	61.7	34.8	0.77
6	Hemagiri	63.8	75.1	50.6	0.48
7	Koida	43.9	57.7	29.5	0.96
8	Kuanarmunda	51.4	62.1	40.6	0.53
9	Kutra	59.1	70.3	48.0	0.46
10	Lahunipara	48.8	59.4	38.1	0.56
11	Lathikata	59.6	75.1	51.3	0.46
12	Lephripara	60.9	72.1	49.6	0.45
13	Nuagaon	47.9	59.7	36.2	0.65
14	Rajgangapur	55.3	66.1	44.6	0.48
15	Subdega	56.3	67.6	45.2	0.50
16	Sundargarh	63.5	76.1	50.9	0.50
17	Tangarpalli	60.3	72.4	48.0	0.51
Total		55.3	67.4	43.1	0.56
ULB					
18	Biramitrapur	72.0	81.6	62.2	0.31
19	Rajgangapur	78.7	85.6	71.4	0.20
20	Rourkela	84.6	90.4	77.7	0.16
21	Sundargarh	83.9	54.8	78.2	-0.30
Total		82.5	89.0	75.0	0.19
Sundargarh District		64.9	75.3	53.9	0.40

Source: Census of India 2001

The Gross Enrolment Ratio (GER) in primary schools for girls has been estimated to be 109.57 in comparison to that of 109.21 of boys, during the year 2011-12. In the upper primary school, the GER of boys remains at 118.99 and for girls 118.26. The Net Enrolment Ratio (NER) of boys and girls at primary school has been more or less similar during the year 2011-12 with 99.30 and 99.34 respectively. Similar trends have also been observed at upper primary school level with NER of 99.02 for boys and 99.14 for girls. The levels of achievement of girls enrolment

at elementary school level may be attributed to various initiatives taken by the Government for promotion of elementary education, with special focus on girl child enrolment and retention. Table 5.5 analysis net enrolment ratios for boys and girls by blocks/ULB. It may be observed that the NER for girls at primary school level has been more than 90 percent in blocks like Bargaon, Bonaigarh, Gurundia, Rajgangpur, Nuagaon and others, whereas in some blocks like Bisra, Tangarpalli and others, the NER of girls has been found to be below 90 percent.

Table 5.5: Net Enrolment Ratio by Block and ULB in Sundargarh District, 2012

SL. No.	Name of Block/ULB	Primary School			Upper Primary School			Elementary School		
		Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Block										
1	Balisankara	91.81	88.28	90.08	96.89	-	-	93.12	92.31	92.71
2	Bargaon	94.48	92.00	93.26	89.45	88.22	88.84	92.76	90.69	91.74
3	Bisra	87.50	89.85	88.66	89.46	94.09	91.34	95.62	93.29	94.47
4	Bonaigarh	96.09	97.86	96.97	82.46	80.68	81.57	91.77	92.37	92.06
5	Gurundia	98.30	98.35	98.84	89.46	94.09	91.77	96.69	97.17	96.93
6	Hemagiri	95.11	93.72	94.43	88.84	90.12	89.50	92.92	92.39	92.66
7	Koida	93.54	94.54	94.04	95.16	93.99	94.62	93.93	94.42	94.17
8	Kuanarmunda	97.17	97.66	97.41	92.19	100.00	97.56	95.92	99.00	97.45
9	Kutra	93.70	96.01	94.83	89.90	84.76	87.34	92.53	92.50	92.52
10	Lahunipada	96.87	96.86	96.87	87.55	82.88	85.22	94.05	92.43	93.26
11	Lathikata	98.59	99.30	98.93	95.23	81.84	93.47	97.75	97.26	97.51
12	Lephripara	87.91	89.10	88.80	92.47	93.47	92.97	89.45	90.64	90.03
13	Nuagaon	97.23	96.62	96.93	94.09	93.41	93.75	96.35	95.72	96.03
14	Rajgangapur	98.09	98.92	98.50	99.79	100.00	100.00	98.57	99.29	98.92
15	Subdega	86.90	86.96	86.93	100.00	98.92	100.00	92.80	90.68	91.78
16	Sundargarh	90.11	92.19	91.15	90.22	91.96	91.06	90.15	92.11	91.12
17	Tangarpalli	88.83	88.42	88.62	96.38	98.44	97.44	91.30	91.83	91.56
ULB										
18	Biramitrapur	87.17	86.75	86.97	99.91	97.99	99.93	93.17	89.98	91.62
19	Rajgangpur	95.46	94.07	94.78	94.51	88.35	91.50	95.12	92.02	93.61
20	Rourkela	99.56	97.52	98.56	93.89	93.07	93.48	97.90	96.17	97.05
21	Sundargarh	100.00	100.00	100.00	99.68	81.26	89.87	103.38	94.90	99.20
Sundargarh District		99.30	99.34	99.32	99.02	99.14	99.08	99.22	99.28	99.25

Source: Odisha Primary Education Programme Authority, 2012.

5.4 Female Work Participation

As per 2011 census, more than two-fifths (41.7 percent) of population are workers and 58.3 percent are non-workers in the district. About 28.0 percent of females participated in the work force, where as 55.1 percent males participated in the work force. The female work participation rate has, however, increased by 3.5 percentage points from 24.8 percent in 1991 to 28.0 percent in 2011.

Between 1991 and 2011, the female work participation rate in rural and urban has increased by 2.9 percentage points and 5.8 percentage points respectively. In addition, out of the total female workers, 36.2 percent are main workers and 63.8 percent marginal workers. With the increasing level of education and availability of opportunities of employment, involvement of women in different sectors has increased in recent years. Participation of women as main workers is

still relatively less than that of males while their share in the marginal work force has been comparatively higher. Involvement of females in the marginal workforce, in comparison to main workforce is because of their involvement in household activities, which are generally considered as unproductive economic activities. Women face a number of disadvantages in terms of employability. First, preferential treatment is

given to males for certain categories of activities that demand physical labour. Second, women are paid less wages than their male counterparts for the same hours of work. Third, as most women do not have required skill for skills based works, their engagement in those sectors are also restricted. These gender-related disparities need be addressed expeditiously and in a fair manner.

Table 5.6: Work Participation Rate by Sex and Residence in Sundargarh District, 1991-2011

Rural/Urban/ Total	1991			2001			2011		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
Rural	56.4	33.2	44.9	53.9	39.2	46.6	56.3	36.1	46.2
Urban	47.2	6.5	28.6	46.6	8.0	28.4	53.0	12.3	33.6
Total	53.2	24.8	39.4	51.3	28.9	40.4	55.1	28.0	41.7

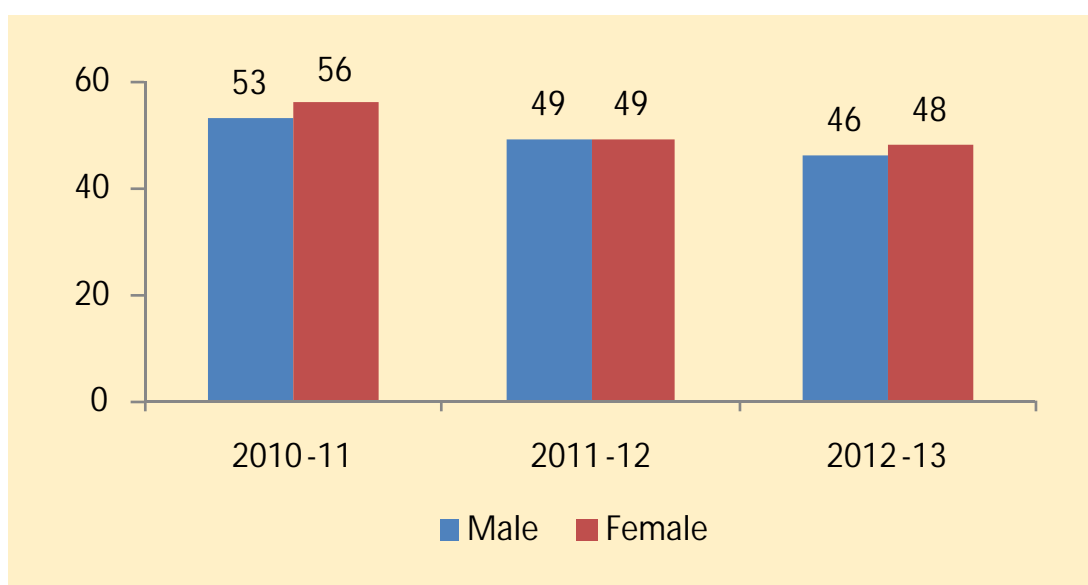
Source: Census of Odisha, 1991, 2001 and 2011

5.5 Child Health Issues

As regards healthcare services, children are at great disadvantage in the society. Access to health care services is limited in tribal dominated district like Sundargarh, which generally high child morbidity, mortality and suffer from malnutrition. As per the DLHS-3 survey, more than three-fifth children received full immunization in the district. About 63.6 percent male children received full as against 60.9 percent female children. Infant mortality rate has been reduces over

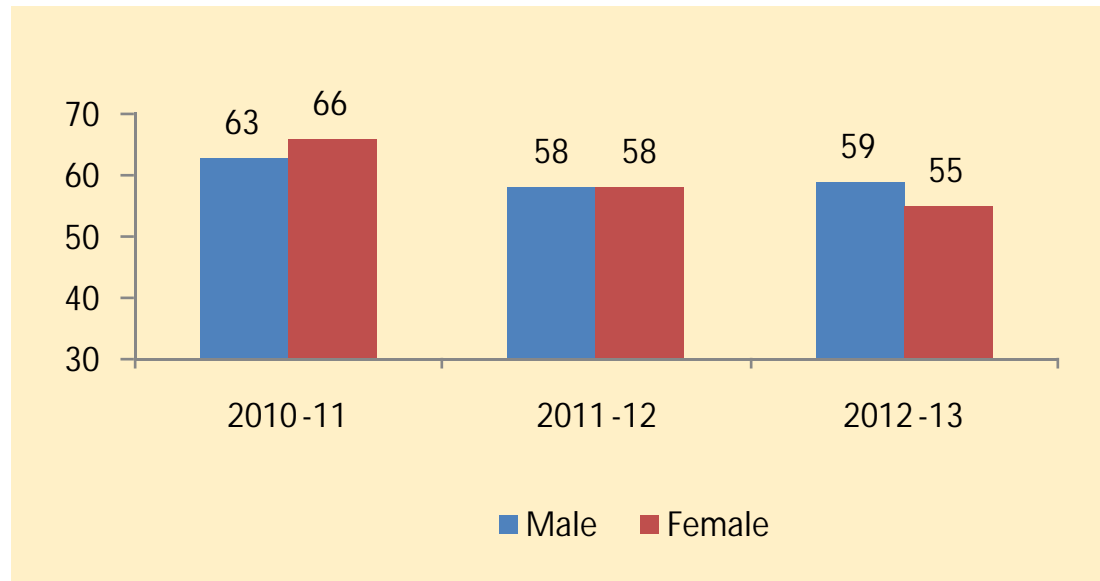
the periods in the district. The female infant mortality rate is (48), which is marginally higher than the male infant mortality (46) in 2012-13. The urban infant mortality rate of female is (24), which is low compared to the rural IMR of female (57). Under five mortality rate has marginally declined from 2010-11 to 2012-13. The U5MR of male is marginally higher (55) than female U5MR (59) in 2012-13. Chart 5.4 and Chart 5.5 summarise the status of infant mortality rates and under five-mortality rates in the district.

Chart 5.4: Status of IMR in Sundargarh District



Source: AHS-1, 2010-11, Odisha; AHS-2, 2011-12, Odisha; AHS-3, 2012-13, Odisha

Chart 5.5: Status of U5MR in Sundargarh District



Source: AHS-1, 2010-11, Odisha; AHS-2, 2011-12, Odisha; AHS-3, 2012-13, Odisha

5.6 Age at Marriage

An early marriage of girls has an adverse effect on their health, education and productive carter. Early marriage may burden a girl with early pregnancy and hence may further affect her health. Mean age of marriage for girls is about 4.2 years less than that for boys in the district and observed increases from 22.5 years in 2010-11 to 22.8 years in 2011-12. Marriage of girls, below the legal age of marriage of 18 years found to be less than that of boys (2.7 for girls and 5.0 for boys) in 2011-12.

5.7 Women's Membership and Participation in Institution

Women's membership and participation in various organizations/institutions are observed limited. While their participation is more in the informal Self Help Groups (SHG), their association in other formal and informal community organisation are not very common. Their membership in several community organisations and governance structures are less and their participation in various organizations have been remain inactive where they are the member. With 50.0 percent reservation for women in the Panchayati Raj institutions, Government has been intended to boost the participation of women in local governance process. It is a

fact that socio-political and economic characteristics also influence to a larger extent in ensuring their active involvement in governance. It has been witnessed, not only in Sundargarh, but also in many other districts of Odisha that a woman heading a local governance institutions, normally remains passive due to various reasons. In such a situation, her family members, preferably male member, normally manage the official functions. The question remains that how far increased reservation, favours to women, would help in strengthening local governance. Looking from gender perspective, in relation to 50 percent reservation for women in the Panchayati Raj institution, it can be argued that while male cannot participate in 50 percent seats that are reserved for women, in the remaining 50 percent cases, women can activity participate and win which may compress the scope for male. Secondly, considering that women population is around 50 percent of the total population composition, their scope of participation in the overall governance process is 100 percent. With around same population composition, scope of male to participate in the governance structure could be at 50 percent. Table 5.7 summaries of membership and participation in various institutions in the district.

Table 5.7: Percentage of Membership and Participation in various Organisations in Sundargarh District

Organisation /Institution	Membership	Participation		
		Total	Male	Female
Caste Council	4.5	97.1	14.3	85.7
Gaon Kalyan Samiti	2.6	100.0	51.2	48.8
Gram Panchayat	2.6	100.0	80.5	19.5
Mother's Committee	3.3	98.0	7.8	92.2
PACS/Co-op. etc.	8.3	96.1	94.6	5.4
Panchayat Samiti	0.6	100.0	90.0	10.0
Parent Teacher Association/ Mother Teacher Association	5.5	97.7	43.5	56.5
Primary Fishery Co-op.	0.4	100.0	100.0	0.0
Rogi Kalyan Samiti	0.4	100.0	28.6	71.4
Self Help Group	39.3	99.0	3.3	96.7
Van Surakshya Samiti	3.6	98.2	89.3	10.7
Village Development Committee	1.0	100.0	87.5	12.5
Village Education Committee	6.5	99.0	63.7	36.3
Water Users Association	1.1	100.0	88.2	11.8
Zilla Parishad	0.1	100.0	100.0	0.0

Source: Primary Survey for DHDR, 2011

It is gradually realised that only reservation for women would not solve the problem rather it will create dummy power centres in the local governance process. What is more essential is to strength the capacity of women, pre and post-election, so that they can truly perform and discharge their duties. Secondly, required skill based may be communicate to them, through handholding and escorting, by which their capacity and working knowledge would increase and it would be supportive for active association in the governance process. With the objective of strengthening elected women representatives, the State has been implementing Rashtriya Gram Swaraj Yojana (RGSY) of Ministry of Panchayati Raj. The scheme supports the empowerment of elected PRI representatives with a special focus on elected women representatives. Apart from that, with the support of UNDP, State Government has been implementing another project, called Capacity Development for Local Governance (CDLG) for strengthening the members of

PRI, including elected women representatives.

5.8 Women's Reservation in Panchayats

A step towards gender equity, Government had declared 2001 as the year of women's empowerment by adopted a national policy. Several laws have been adopted to empower women socially, economically, legally and politically. The Constitution not only guarantees equality to women, but also empowers the State to adopt measures of positive discrimination in favour of women. Since the Fifth Five year plan (1974-78), Government have been making a marked shift in its approach to women's issues from welfare to development while keeping the empowerment of women as the key issue in determine their status in the society. Considering the role of rural people in Odisha, the Government had taken several measures to strengthen Panchayati Raj system with the active participation of women. This gave boost to increase the number of women

being elected to the 3 tier system, an indication to suggest their political empowerment. The 73rd Constitutional Amendment has created space for women in politically participation and representative for rural people by providing 1/3rd seats are reserved in all over the country. Odisha is the first State to introduce one-third reservation

for women in panchayats. In 2007 panchayat election, 35.7 percent Sarapanch, 42.6 percent Panchayat Samiti, 35.3 percent Zilla Parishad member seats have been reserved for women. Table 5.8 analyses the status of women reservation in Panchayati raj institutions by blocks.

Table 5.8: Women Reservation Status in Panchayati Raj Institutions by Block in Sundargarh District

SL. No.	Name of Block	Sarapanch		Samiti Member		Zilla Parishad Member	
		Total No. of Seats	Reservation for Women	Total No. of Seats	Reservation for Women	Total No. of Seats	Reservation for Women
1	Bargaon	13	5	13	5	2	0
2	Balisankara	16	5	16	7	2	1
3	Bonaigarh	13	5	13	6	2	2
4	Bisra	15	5	15	6	2	1
5	Gurundia	13	5	13	6	2	1
6	Hemagiri	19	7	19	9	2	1
7	Koida	12	4	12	5	2	1
8	Kuanarmunda	21	7	21	8	2	-
9	Kutra	16	6	16	6	2	1
10	Lahunipada	17	6	17	6	2	1
11	Lathikata	16	6	16	7	2	1
12	Lephripada	17	7	17	6	2	-
13	Nuagaon	20	7	20	8	2	1
14	Rajgangpur	12	4	12	6	2	-
15	Subdega	14	5	14	6	2	1
16	Sundargarh	16	6	16	9	2	-
17	Tangarpalli	13	4	13	6	2	-
Total		263	94	263	112	34	12

Source: Panchayat Raj website, Sundargarh, 2007

5.9 Women's Welfare

State Government has been implementing a number of programmes for the women empowerment on health, education and their economic empowerment. One of such programme, which is prominent in the State, is Mission Shakti. Government of Odisha has been implementing it in a mission mode for the empowerment of women through SHG since 2001. This Mission works towards strengthening of existing self help groups as well as organising new ones. As a part of

women's empowerment, each year new SHG has been formed in the district with emphasis on uncovered areas. The Mission is carrying out its mandate in collaboration with a number of local NGOs. Apart from that, formal financial institutions, Regional rural banks and micro finance institutions are also in the process of promoting women SHGs not only to achieve the mandate of women's empowerment but also for providing various financial services. Because of the availability of financial services from formal and semi-

formal sectors, a number of women SHGs are engaged in various income generating activities. The major activities undertaken by different WSHGs are fish farming, vegetable cultivation, dairy, goat rearing, sheep rearing, groundnut processing, rice processing, terracotta, mushroom cultivation, tailoring,

candle and agarbati (incense sticks) making, leaf plate making etc. Apart from that, Government has launched National Rural Livelihoods Mission for empowering women economic. To strengthen their skill as well as generating economic activities; Govt. has introducing vocational training programmes.

Table 5.9: Number of SHGs Formed and Trained by Block and ULBs in Sundargarh District

S. No.	Name of Project	No. of SC Group Formed	No. of ST Group Formed	No. of SHG group formed			No. of Groups taken Vocational Training	
				Micro Finance	Revolving fund	SGSY	Group	Members
Rural								
1	Balisankara	27	614	269	86	22	0	0
2	Bargaon	34	352	252	92	61	30	1,327
3	Bisra	11	346	138	22	79	150	1,560
4	Bonaigarh	58	480	375	187	46	128	1,330
5	Gurundia	14	626	348	293	75	61	676
6	Hemagiri	28	130	78	14	26	0	0
7	Koida	13	450	122	45	27	106	1,040
8	Kuanarmunda	16	886	527	323	146	48	452
9	Kutra	62	738	231	78	68	56	650
10	Lahunipada	29	609	405	178	101	70	712
11	Lathikata	25	582	271	188	41	15	205
12	Lephipada	49	222	52	86	33	16	160
13	Nuagaon	8	482	336	71	24	72	1,220
14	Rajgangpur	8	941	570	161	123	147	539
15	Subdega	18	410	278	60	76	7	62
16	Sundargarh	110	319	189	59	46	69	759
17	Tangarpalli	60	273	172	49	52	37	310
Urban								
18	Biramitrapur	50	99	97	0	0	4	42
19	Rourkela	43	148	71	37	0	23	240
Sundargarh District		663	8707	4,781	2,029	1,046	1,039	11,284

Source: DSWO, Sundargarh, 2012

5.10 Women's Trafficking

Women's trafficking is rising as one of the major challenge before the District Administration. According to a complaint lodged with the National Human Rights Commission (NHRC) by a social activist named Mr. Ramesh Kumar Mandal, from

Rourkela in May 2012, about 5,000 tribal girls have gone missing in the district in the last five years¹. People's in the district opinion that number of cases remained unreported it could be more². Looking at the increasing cases of women trafficking, the Department

¹Source: ANI News

²Opinion of the Members participated in the District Consultation Workshop.

of Police has been trying to focus on preventive and retentive efforts in close collaboration with other departments such as the Women and Child Development Department, ST/SC Development Department, Educational Department, and Department of Labour etc. to address the issue in a holistic manner.

Discuss with women folk in different blocks through focus group discussion that reveals different facets of gender discrimination, which are primarily related to discrimination against women. Most of women (92.4 percent) reported that gender discrimination in health and education issues are very common along with governance participation and accept/give due importance to women voices. It has been found to be socio-economically poor segment, due importance is not given for

children's higher education, in spite of several Government measures. No proper health care and treatment are the factor, which is reflected in economically poor and backward families. Financial burden is also another issue, though percentage is very less, i.e., 0.4 percent. This type of incidence occurs largely in the middle or lower middle class families. Economic factor observed to be the major attribute for such situation. Though positive discrimination initiative have been taken for increasing women participation in the local governance process, still results are not encouraging in Palli Sabha or Gram Sabha. In many cases, it is opined that women are not informed appropriately to participate in the process nor they feel it important to be a part of the process (3.7 percent). Table 5.10 summaries the key gender issues in different blocks in the district.

Table 5.10: Gender Issues in different Blocks of Sundargarh District

S. No.	Name of Block	Gender discrimination in health, education and other cases	Delivery patient faced problems due to poor road condition/transportation	Long-time taking to collect or bring drinking water	Mostly female persons are unaware/not give importance in G. Sabha or Palli Sabha	Unless financial problem raise due to non-availability of ration card/BPL card etc.	Female SHG member have no scope for vocational training
1	Bargaon	100.0	-	-	-	-	-
2	Balisankara	88.5	-	-	11.5	-	-
3	Bonaigarh	100.0	-	-	-	-	-
4	Bisra	100.0	-	-	-	-	-
5	Gurundia	91.7	-	8.3	-	-	-
6	Hemagiri	89.2	1.4	9.5	-	-	-
7	Koida	25.0	25.0	-	25.0	25.0	-
8	Kuanarmunda	100.0	-	-	-	-	-
9	Kutra	100.0	-	-	-	-	-
10	Lahunipada	83.3	-	16.7	-	-	-
11	Lathikata	100.0	-	-	-	-	-
12	Lephipada	100.0	-	-	-	-	-
13	Nuagaon	97.1	-	-	-	2.9	-
14	Rajgangpur	97.2	2.8	-	-	-	-
15	Subdega	85.1	-	-	9.0	-	6.0
16	Sundargarh	92.7	-	2.4	2.4	-	2.4
17	Tangarpalli	95.9	-	-	4.1	-	-
Total		92.4	0.6	1.9	3.7	0.4	1.0

Source: Primary Survey for DHDR, 2011

5.11 Addressing Gender Disparities

It may be argued that since gender is a social construct, gender disparities also result from social and economic processes. The typical roles, work profiles, power relations, differential access and control to resources and opportunities, and entitlements for men and women have resulted from deep rooted social orientations. Mainstreaming gender is both a technical and a political process, and requires shifts in organizational cultures and ways of thinking, as well as in the goals, structures and resource allocations. Mainstreaming requires changes at different levels within institutions, in agenda setting, policy-making, planning, implementation and evaluation. Instruments for the mainstreaming effort include new staffing and budgeting practices, training programmes, policy procedures and guidelines.

Addressing gender disparities requires actions at civil society as well as Government level. The efforts of civil society are needed to reshape the deep rooted social orientations so that bias and discriminations against women are reduced. The State mandate is to enact appropriate laws, enunciate right polices and implement needed programmes for affirmative action in favour of women. It is heartening to note that gender disparities are being addressed at both civil society and at the State level. A number of civil society organization have directed their efforts to generate awareness among all stakeholders, to lobby for appropriate policies, laws and programmes that may positively impact gender equality and equity.

Some specific measures that have been taken by the State Government for promoting gender equity include: ensuring equal wages for equal work for all without gender bias; creating awareness and making efforts to promote female literacy; creating additional infrastructure like girls toilets and common rooms in educational institutions and public places; reservation seats for girl students in technical institutions; providing an enabling work environment where both men and women and actively participate in work;

reserving one-third seats for women in local decentralised governance systems which recently increased to 50 percent; prohibiting illegal sex determination test; taking health measures to reduce female infant mortality and maternal mortality rates; creating fast track special courts to deal with violence against women; implementing the dowry prohibition Act; implementing appropriate women welfare programmes; and implementing the law on sexual harassment at the workplace. The State has also taken several steps to improve gender equity and women's welfare. For example, a number of educational programmes have been specifically directed to promote girls' education. These include the National Programme for Education of Girls at Elementary Level (NPEGEL), District Primary Education Programme (DPEP), and the Kasturba Gandhi Balika Vidyalaya (KGBV). The salient aspects of these programmes have been described in the previous chapter. These programmes have been implemented in Sundargarh with a view to improving levels of female literacy in the district.

5.12 Conclusion

The Government of Odisha has been implemented several programmes and Schemes concerning gender related issues and implemented by the District Administration to improve the gender gaps and disparity in the district. The sex ratio has been increased from 931 in 1981 to 973 in 2011. There is 42 points increase in the overall sex ratio between 1981 and 2011. The child sex ratio in Sundargarh district has declined from 970 in 1991 to 946 in 2011, which is 24 points decline. The overall literacy rate has been increased from 53.0 percent in 1991 to 73.3 percent in 2011. Considerable improvement has observed in female literacy rate in the district. The female literacy has increased from by 25.9 percentage points from 39.6 percent in 1991 to 65.5 percent in 2011 whereas the male literacy has increased only 15.6 percentage points during the same period. The gender gap has declined from 25.8 percentage points in 1991 to 15.5

percentage points in 2011. To achieve MDG targets by 2015 as regards gender gaps in literacy, considerable effects are required. There is no gender gap in net enrolment ratio at primary and upper primary school in the district. The female work participation rate has substantially increased by 3.5 percentage points from 24.8 percent in 1991 to 28.0 percent in 2011. In terms of IMR and U5MR,

it has been observed that the district has marginally gender gaps in 2012-13, which are two points and four points respectively. In addition, between 35 and 43 percent of seats reserved for women in the panchayati election in 2007. Increasing reservation norm in PR Institutions for women seems to increase better participation of women in governance process.







CHAPTER 6

Environment and Climate Change

“It is not so much for its beauty that the forest makes a claim upon men's hearts, as for that subtle something, that quality of air that emanation from old trees, that so wonderfully changes and renews a weary spirit. ”

-Robert Louis Stevenson

Environment and Climate Change

6.1 Introduction

Odisha is prone to natural calamities, i.e., calamities triggered by natural factors such as cyclones, droughts, and floods. More recently, abnormally high temperatures have also been included to this list. These are being attributed to increasing ecological imbalance and climate change. The term “disaster” has been defined by the United Nations as “a serious disruption of the functioning of a society, causing widespread human, material or environmental losses, which exceed the ability of the affected society to cope using its own resources¹”. Natural disasters cause heavy losses of human lives and property and pose serious environmental threats.

Though the impact of global warming and climate change has not been systematically studied at the district level in Odisha, some effects of global warming and climate change have already become manifest. For example, the State and districts witnessed very high temperatures in 1999 and 2009. Annual rainfalls have also become erratic over the years and the period of rainfall appears to be shifting from June-September to July-October. Drought-like situations have been witnessed with more frequency. This has been affecting farmers and other poor whose livelihoods are adversely affected. If temperatures rise by two percent, as the

climate change experts have projected, soil moisture regimes shall further worsen. This would impact very adversely the livelihoods of farmers, agriculture labourers and other poor and would also increase poverty.

Sundargarh is susceptible to natural calamities / disasters. The district affected by heat waves and outbursts of epidemics in some parts. This chapter discusses about environment and climate variability in the district and occurrences of different disasters for some time past.

6.2 Rainfall

Rainfall data of four years, i.e., 1999, 2001, 2005 and 2007 reflects that majority of blocks in the district have received less rainfall than the normal. Some blocks have less rainfall than the normal in consecutive years. This has a negative impact on agriculture and people's livelihoods. Small and marginal farmers with inadequate or no irrigation facility remain worse affected due to rainfall variations. Distribution of rains over the year has been given in Annexure 6.1.

6.3 Temperature

The district has been witnessing increment in temperature during summer and in different months of the year. In comparison to 1997, during 2009, district recorded increment in

¹See Odisha Human Development Report 2004

minimum and maximum temperatures during different months, even during winter like January and February. Looking at maximum and minimum temperatures of the district during different months, it is apparent

that temperature variability is prominent in the district and is an indication of changing climatic situation. Table 6.1 analyses month-wise variations maximum and minimum temperatures.

Table 6.1: Month-wise Maximum and Minimum Temperatures of Sundargarh District, 1997-2009 (in °C)

Month	1997		2003		2005		2006		2007		2008		2009	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
January	33.1	6.3	33.1	4.4	31.1	6.9	35.1	5.4	34.6	5.9	31.9	6.9	33.5	8.4
February	35.6	7.3	35.6	12.4	36.1	8.4	41.1	8.4	34.9	8.9	35.4	7.4	37.0	10.4
March	40.1	10.3	40.1	14.9	41.1	16.4	41.1	12.4	40.4	9.9	39.9	12.4	39.0	15.9
April	44.1	13.3	44.1	20.4	44.1	17.9	43.1	15.9	44.4	18.9	44.4	16.9	45.5	19.4
May	-	19.3	-	-	46.6	19.9	43.6	20.4	45.4	20.9	46.0	22.9	45.0	21.9
June	46.6	26.8	46.6	21.9	47.6	22.4	42.1	20.9	45.9	23.9	41.5	21.9	43.0	22.9
July	35.1	-	35.1	22.4	36.1	21.9	35.1	20.4	34.9	22.9	33.5	21.9	33.5	22.9
August	34.1	-	34.1	21.9	-	-	36.1	20.9	35.4	22.4	34.0	21.4	34.0	21.9
September	33.1	-	33.1	21.9	36.1	21.9	36.1	20.4	-	-	36.8	21.4	34.0	21.9
October	33.1	-	-	16.4	-	-	36.6	14.9	34.9	15.9	36.0	13.9	32.5	13.4
November	-	-	-	-	-	-	33.6	11.9	33.4	11.9	34.0	10.4	33.0	9.9
December	-	-	-	-	-	-	33.6	6.9	29.9	7.4	31.5	7.9	28.0	8.4

Source: Director, Meteorological Centre, Bhubaneswar; District Statistical Handbooks of Different Years



6.4 Forest Coverage

Forests play a major role in securing vegetation based ecosystem services and supporting rural communities in strengthening their livelihoods systems. Forests have been proved beneficial in tapping atmospheric carbon and keeping air clean. Degradation of this natural resource is a common phenomenon all over the State and Sundargarh is not an exception. The district reflects a negative growth in green cover

across different blocks, when forest area status of 2008-09 is compared with 1998-99. As a result, contribution of forests to the district economy shows a declining trend over the years, i.e., from 3.3 percent during 2000-01 to 2.4 percent during 2004-05. Table 6.2 provides forest area by block and growth of forests between 1998-99 and 2008-09. Table 6.2 indicates that forests have been declining in all blocks except Lephripada, Sundargarh and Tangarpalli blocks.

Table 6.2: Growth in Forest Area in different blocks of Sundargarh District, 1998-99, 2006-07 and 2008-09

S. No.	Name of Block	Forest Area (in hector)			Percent of Forest Growth (1998-99 to 2008-09)
		1998-99	2006-07	2008-09	
1	Balisankara	7,985	7,345	7,166	-10.26
2	Bargaon	12,063	7,099	11,647	-3.45
3	Bisra	1,820	1,860	1,533	-15.77
4	Bonaigarh	14,709	6,577	8,707	-40.80
5	Gurundia	21,547	25,678	21,016	-2.46
6	Hemgiri	27,557	23,534	24,155	-12.35
7	Koida	19,221	16,078	17,477	-9.07
8	Kuanarmunda	9,358	13,055	6,721	-28.18
9	Kutra	1,434	4,763	1,023	-28.66
10	Lahunipada	11,125	11,523	9,861	-11.36
11	Lathikata	7,145	6,717	6,043	-15.42
12	Lephripada	10,455	9,824	13,393	28.10
13	Nuagaon	2,965	3,036	2,679	-9.65
14	Rajgangpur	6,477	8,945	8,490	31.08
15	Subdega	6,903	7,527	5,457	-20.95
16	Sundargarh	7,909	9,358	8,404	6.26
17	Tangarpalli	2,624	2,899	4,723	79.99

Source: Directorate of Economics and Statistics, Odisha of Different years

According to the State of Environment Report, Odisha, 2007, forest area under encroachment in the district has increased from 2,932.093 ha in the year 1961 to 3,771.364 during the year 2003. During 1991, the district had 272,400 ha of dense forests and 128,900 ha of open forests with per capita forest cover of 1.81 ha. During 2003, the area under dense forests was 262,500 ha and open forest area was 14,700 ha with per capita forest cover of 0.151 ha. Increasing

expansion of urban areas, growth in industrial / mining activities and increasing domestic demands have been responsible for rampant degradation of forests in the district. However, Government has taken certain initiatives for restoration and promotion of green cover in the district.

6.5 Pollution

Sundargarh is known for different mineral reserves, which have attracted mining activities. While mining activities contribute

to the district economy and create opportunities of employment for the local people, these activities has been posing threat to environment. Mining and industries have been major sources of air and water pollution in the district. The Ib valley coalfield, which is part of Ib river basin, falls within the administrative areas of Jharsuguda, Sambalpur and Sundargarh districts of Odisha and has one of the largest coal deposits in the country. These vast coal deposits have attracted several coal-based and water-intensive industries, which have in turn polluted the Ib river and its tributaries. The pollution affects the lives of the villagers living in the mining heartlands. Fishermen as well as habitations dependent on the Ib River for their domestic water needs also get affected. While underground and open cast mining has impacted quantitative access to groundwater, pollution has damaged the quality of surface water. Pollution became far more severe over the years. Pollution of the Ib River was the only problem till about a decade ago, but now, most streams and tributaries are polluted. Effluents from MCL's coal mines, coal washeries, industries, growing urban settlements, and washing of heavy vehicles in rivers and streams cause pollution of surface water sources. According to a 2008 report of the Pollution Control Board, there are 10 coal mines that discharge around 33,065 kilolitres per day of waste water into this river during the monsoons and pose a serious threat due to the presence of heavy metals and compounds of Sulphur².

6.6 Disasters

Sundargarh has experienced disasters of different nature and of different degree

Table 6.3: Occurrence of Disasters in Sundargarh District, 1998 to 2011

Year	Disaster Type	Number of Affected Village/Block/Tehsil
1998	Flood	NA
2003	Fire	5
2004	Fire	2
2004	Hail	2
2005	Hail	2
2005	Fire	10
2006	Fire	12
2007	Fire	7
2008	Fire	2
2010	Drought	1,459
2010	Lightning	NA
2010	Hail	2
2011	Fire	NA
2011	Drought	7

Source: Environmental Information Database, 2014.
NA: Data not available

during the period 1998 to 2011. Drought in 2010 affected major part of the district and was very serious. Year-wise occurrence of different disasters in the district is presented in Table 6.3.

The district faces occasional flash floods because of the terrain, which cause heavy damage to internal roads and crops. Occurrence of droughts of different degree (less than 50 percent crop loss, 50 percent-75 percent crop loss and more than 75 percent crop loss) is relatively frequent in different parts of the district due to various reasons such as uneven and erratic rainfall, inadequate irrigation infrastructure and inadequate soil moisture³.



²Source: Water Conflict in Odisha, A compendium of case studies, Forum for policy dialogue on water conflicts in India.

³With Reference to District Gazette, 1993, Government of Odisha, District Vision Document, Sundargarh.



CHAPTER 7

Summary and Way Forward

“Take up one idea. Make that one idea your life - think of it, dream of it, live on that idea. Let the brain, muscles, nerves, every part of your body, be full of that idea, and just leave every other idea alone. This is the way to success, that is way great spiritual giants are produced. ”

-Swami Vivekananda

Summary and Way Forward

Sundargarh is the second largest district of the State with geographical area of 9,712 sq. km., 6.23 percent of the State area. It has a forest cover of 4,957 sq. km., which is more than half of its geographical area. The climate of the district is generally extremely hot in summer and cold in winter. The normal rainfall in the district is of the order of 1,422 mm. The district is divided into three sub-divisions, 18 tehsils, 17 blocks, 4 urban local bodies and 262 gram panchayats. It is sixth most populous district of Odisha, its population being 20.93 lakh persons in 2011, which is 4.99 percent of the State population. The sex ratio in the district was reported 973 females per 1000 male in 2011. More than three-fifth population lives in rural areas. The population density is 216 persons per sq. km., which is lower than the State average of 270 persons per sq. km. Sundargarh is a tribal dominated district comprising 50.7 percent tribal population. Main tribal communities include *Munda*, *Kharia*, *Oram*, *Kisan*, *Bhuyan* and *Gonda*. Transport and communication network in the district is satisfactory as all blocks are well connected.

Sundargarh contributes about eight percent of the Gross State Domestic Product (GSDP) of Odisha, which is more than double of the average district share of 3.33 percent. The real per capita income of the district at 2004-05 prices has increased from Rs.25,029 in 2004-05 to Rs.36,128 in 2008-09. About 40 percent population of the district

was reported as working population, male working population being 53.62 percent and female working population being 25.89 percent in 2011. Of the total workers, main workers constituted 64.99 percent and marginal workers 35.01 percent in 2001. The work participation rate in the district marginally increased from 39.4 percent in 1991 to 41.7 percent in 2011. The male work participation rate at 55.1 percent was higher than the female worker participation rate of 27.9 percent in 2011. The rural work participation rate of 46.2 percent was higher than urban work participation rate of 33.6 percent in 2011. It may be observed that the male working population is more than double than that of female working population. It is, however, heartening to note that the female work participation rate has increased by 6.02 percentage points from 21.93 percent in 1981 to 27.95 percent in 2011. It has been further observed that distribution of household incomes and assets is highly unequal in the district. These aspects need focused attention.

- There is a need to improve the work participation rate of female workers who may contribute significantly to the district and state economy and incomes.
- Efforts are also needed to improve employable skills of women so that they can meaningfully participate in economic activities.
- There is also need to further fine tune development policies to reduce

inequalities in income and asset distribution among households.

- It is also a matter of concern that the number and proportion of marginal workers has been rising. This trend needs to be arrested. Efforts are needed to improve employable skills of marginal workers and create meaningful employment opportunities for such workers in non-farm sectors.

District poverty measures are not reported by Planning Commission on the basis of National Sample Survey (NSS) data. If the poverty estimates reported for the northern NSS region of Odisha, which includes Sundargarh district are taken as proxy for Sundargarh district, some inferences can be drawn as regards incidence of poverty in the district. There was significant reduction in rural poverty by 30.53 percentage points from 70.50 percent in 2004-05 to 39.97 percent in 2011-12 in the northern NSS region of which Sundargarh is a part. The region reported highest poverty reduction among all NSS regions of the State. Further analysis has indicated that poverty reduction was also significant for ST and SC social classes. It is also heartening to note that per worker real Gross District Domestic Product (GDDP) at 2004-05 prices increased from Rs.77,197 in 2004-05 to Rs.119,409 in 2009-10. Some policy implications of these observations are as follows:

- Though Sundargarh district has witnessed impressive economic growth and higher poverty reduction, the incidence of poverty at 39.97 percent in 2011-12 in the northern NSS region was still very high and concerted efforts were needed to continue with development momentum to reduce poverty at faster pace.
- ST and SC, which constitute large proportion of the district population, these communities have reported much higher incidence of poverty. There was a need to further step up efforts to improve their livelihoods and to reduce their poverty at faster pace.

Agriculture, animal husbandry, fisheries and collection of non-timber forest products are important sources of livelihoods in the district. These sectors contribute about 16

percent share to the district economy. The average operational holding among farm households is 1.32 ha in the district. A majority of farmers is marginal farmers with average operational holding of 0.59 ha. The distribution of operational holdings in the district is grossly unequal. Several initiatives have been taken by the State Government to promote agriculture, horticulture, animal husbandry and fisheries sectors and to raise productivities and production. Irrigation facilities have been significantly improved over the periods. Involvement of local people, particularly those who significantly depend on forests for augmenting their incomes, in forest management and conservation has been encouraged through *Vana Samarakhshan Samittees* (VSS). The State has also been striving to promote financial inclusion so that people have easy access to affordable credit and other financial services. Mission *Shakti* which operates through Self Help Groups (SHG) is a main vehicle for women empowerment and financial inclusion. The following interventions, however, seem desirable.

- Farm holdings have been continuously becoming smaller and economically unviable. This trend needs to be arrested.
- Land based livelihoods may be adversely affected due to climate change effects over period of time. In particular, a large part of district may witness increasing loss of soil moisture. There was a need to take remedial steps so that adverse impact of climate change may be better tackled.
- There was also need to substantially improve productivity of agriculture, fisheries, animal husbandry and forestry activities.

The State has also taken several initiatives to improve food and nutritional security of the people and to tackle malnutrition and anaemia in the district. Nutritional intake of targeted children and pregnant and lactating women has been improved through supplementary nutrition programme and other interventions. *Anganwadi* centres have played a key role in improving access of targeted children and women to specific healthcare services and nutritional intake. Major food interventions include public

distribution system (PDS), Mid Day Meal (MDM), *Antodaya Anna Yojana* (AAY), *Annapurana Yojana* and subsidised rice scheme. Some 4,29,511 households are entitled to concessional food and other items under PDS. MDM focuses on students in primary and upper primary schools. AAY and *Annapurana Yojana* cater to the needs of poorest of the poor and old and infirm persons. Subsidised rice to the extent of 25 kg per household is provided to BPL households at the rate of Rs. 1 per kg. Several social security benefits have been extended to targeted persons, particularly old, widows, disabled and destitute persons. These programmes include Indira Gandhi National Old Age Pension (IGNOAP), Indira Gandhi National Widowhood Pension (IGNWP), Indira Gandhi National Disability Pension (IGNDP) and Madhu Babu Pension Yojana (MBPY).

- There was, however, need to ensure that those who are food insecure and vulnerable need special attention and the number of such households need to be reduced considerably through appropriate interventions.

Good health is an important component for human wellbeing. Health indicators are an integral part of human development. Health infrastructure and indicators in the district have improved significantly due to concerted efforts of the State Government. The district has considerably improved its performance in implementing NRHM and other health programmes. Deaths due to malaria, TB and diarrhoea have reduced considerably in the district. The reproductive and child health (RCH) interventions have also positively impacted child and women health indicators in the last decade. Institutional deliveries have increased from 33.6 percent in 1998-99 to 75.4 percent in 2011-12. About 80 percent children in the age group of 12-24 months were fully immunized in 2011-12. There is considerable reduction in child mortality rates and maternal mortality ratio in the district. Infant mortality rate (IMR) of the district has come down from 55 in 2010-11 to 47 in 2011-12 and maternal mortality ratio (MMR) from 253 in 2010-11 to 234 in 2011-12. Under five mortality rate has been tracked and efforts made to considerable reduce it. Several

initiatives have been implemented to provide safe drinking water to rural areas, schools and *anganwadi* centres. Total Sanitation Campaign has also been mounted to encourage the use of household latrines and school and *anganwadi* toilets. There are, however, several health concerns that need be addressed effectively and in time bound manner.

- Though the district has been progressing well on targeted health indicators, such indicators, particularly child mortality and maternal mortality indicators need be further reduced to bring them well below national targets.
- The district faces shortage of medical professionals including health specialists. This adversely affects the reach of local people to affordable health services and is a matter of serious concern. Concerted efforts are required to be taken to address this problem.
- There are also inequalities in rural and urban areas as regards access to quality healthcare services, institutional deliveries and full immunization programmes. Necessary efforts are needed to bridge regional and gender inequalities as regards key health indicators.

The district has also made significant improvement in literacy and education levels. School infrastructure has been substantially improved since 1947-48. Several programmes including *Sarva Shiksha Abhiyan*, District Primary Education Programme, National Programme for Education of Girls at Elementary Level (NPEGEL), *Kasturba Gandhi Balika Vidyalaya* and Mid-Day-Meal programme have been implemented in the district to improve the status of education. Enrolments both at primary (6-11 year age group) and upper primary (11-14 year age group) levels have been continuously rising. The NER for the year 2011-12 was 99.20 percent in 6-14 year age group. Retention rate has improved from 43.2 percent in 2006-07 to 80.4 percent in 2011-12. The transition rate increased from 60.3 percent in 2006-07 to 95.7 percent in 2011-12. Out-of-school children have got reduced from 9,651 in 2008-09 to 373 in 2013-14. The dropout rates have been progressively declining over the years.

As a result of these and other interventions, the district has considerably improved literacy rates of all including female and marginalised groups including Scheduled Castes (SC) and Scheduled Tribes (ST). The district reported literacy rates of 65.5 percent for females and 81.0 percent for males as per the 2011 census. The gender gap in literacy rates has come down from 25.6 percentage points in 1961 to 15.5 percentage points in 2011. The gap in rural and urban literacy rates has also decreased from 30.6 percentage points in 1981 to 18.7 percentage points in 2011. The literacy rates of SC and ST communities are still lower than the district averages. There are, however, several areas which need immediate attention.

- It is a matter of serious concern that literacy rates for minorities are very low, only 35.5 percent with literacy rate of 41.3 percent and female literacy rate of 29.6 percent in 2011.
- There are still regional, social and gender disparities as regards literacy rates in the district. These disparities need be addressed as soon as possible.
- The district is yet to achieve the objective of universal literacy among all groups including women and marginal groups.
- Several schools still continue to be single teacher schools. These schools need to have prescribed number of teachers as soon as possible.
- There is a pressing need to enhance enrolment rates for boys and girls both at primary and upper primary levels. The momentum that was gathered by the end of the last decade needs to be maintained.

Efforts have also been made to improve gender parity. As a result, gender gap in literacy levels has come down from 25.8 percentage points in 1991 to 15.5 percentage points in 2011-12. There is no gender gap in net enrolment ratio at primary and upper primary levels. Female work participation rate has increased by 3.5 percentage points

from 24.8 percent in 1991 to 28.0 percent in 2011. Fifty percent seats have been reserved for women in panchayat bodies with a view to enhance their participation in governance process. There are, however, several areas in which gender disparity persists and needs be addressed.

- Sex ratio has increased from 931 in 1981 to 973 in 2011. However, the child sex ratio in 0-6 year age group has got adverse from 970 in 1991 to 946 in 2011. This is a matter of serious concern and need be addressed in a time bound manner.
- There is a need to further improve the work participation rate of female workers who may contribute significantly to the district and state economy and incomes. Efforts are also needed to improve employable skills of women so that they can meaningfully participate in economic activities.
- Though female literacy rates have improved over the years, there is still substantial gender gap in literacy rates in the district. This disparity need be addressed in a time bound manner.
- Women face difficulties and discrimination in accessing quality healthcare services. Concerted efforts are needed to improve their access to quality healthcare services.

Sundargarh district is susceptible to natural calamities / disasters, in particular droughts. Though the impact of global warming and climate change has not been systematically studies at the district level, the district is likely to adversely impacted due to climate change. It is expected that the district may face frequent droughts and reduction in food output. There is thus need to take appropriate steps to deal with such eventualities. Forests in the district are subjected to heavy biotic interference and have been facing degradation. There is a need to improve green cover both in quantity and quality.



ANNEXURE

Annexure 1.1: District-wise area and population in Odisha, 2011

SL. No	Name of Block/ULB	Total Number of Workers			Percentage of Total Workers to Total Population	Percentage of Main Workers to Total Workers	Percentage of Marginal Workers to Total Workers
		All Workers	Main Workers	Marginal Workers			
Block							
1	Balisankara	38,616	20,480	18,136	50.3	53.0	47.0
2	Bargaon	30,222	17,286	12,936	46.7	57.2	42.8
3	Bisra	27,366	18,135	9,231	35.7	66.3	33.7
4	Bonaigarh	30,419	15,631	14,788	48.7	51.4	48.6
5	Gurundia	29,356	13,111	16,245	50.8	44.7	55.3
6	Hemgiri	41,510	23,236	18,274	54.8	56.0	44.0
7	Koida	30,248	20,817	9,431	42.2	68.8	31.2
8	Kuanarmunda	39,515	20,246	19,269	45.2	51.2	48.8
9	Kutra	30,988	18,477	12,511	43.6	59.6	40.4
10	Lahunipada	38,973	20,198	18,775	45.8	51.8	48.2
11	Lathikata	46,289	32,151	14,138	37.7	69.5	30.5
12	Lephipada	37,861	20,733	17,128	52.9	54.8	45.2
13	Nuagaon	38,383	23,516	14,867	42.0	61.3	38.7
14	Rajgangpur	29,663	19,728	9,935	32.7	66.5	33.5
15	Subdega	27,609	14,349	13,260	48.1	52.0	48.0
16	Sundargarh	36,798	21,452	15,346	57.6	58.3	41.7
17	Tangarpalli	29,420	17,396	12,024	50.5	59.1	40.9
	Total	583,236	336,942	246,294	45.4	57.8	42.2
ULB							
1	Biramitrapur	8,703	7,133	1,570	29.6	82.0	18.0
2	Rajgangpur	11,825	10,589	1,236	27.1	89.6	10.5
3	Rourkela	124,002	115,645	8,357	28.6	93.3	6.7
4	Sundargarh	11,037	9,825	1,212	28.7	89.0	11.0
	Total	155,567	143,192	12,375	28.5	92.1	8.0
	Sundargarh District	738,803	480,134	258,669	40.4	65.0	35.0

Source: Census of India, 2011

Annexure 1.2: Month-wise Maximum and Minimum Temperature in Sundargarh District, 1997-2009

Month	1997		2006		2007		2008		2009		2011		2012	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
January	33.1	6.3	35.1	5.4	34.6	5.9	31.9	6.9	33.5	8.4	26.4	9.2	24.7	12.3
February	35.6	7.3	41.1	8.4	34.9	8.9	35.4	7.4	37.0	10.4	31.0	13.5	30.6	12.9
March	40.1	10.3	41.1	12.4	40.4	9.9	39.9	12.4	39.0	15.9	36.6	18.7	36.5	17.3
April	44.1	13.3	43.1	15.9	44.4	18.9	44.4	16.9	45.5	19.4	36.6	21.9	39.3	22.5
May	-	19.3	43.6	20.4	45.4	20.9	46.0	22.9	45.0	21.9	39.9	25.2	42.6	25.2
June	46.6	26.8	42.1	20.9	45.9	23.9	41.5	21.9	43.0	22.9	34.5	25.1	38.0	25.0
July	35.1	-	35.1	20.4	34.9	22.9	33.5	21.9	33.5	22.9	31.6	23.6	30.8	22.8
August	34.1	-	36.1	20.9	35.4	22.4	34.0	21.4	34.0	21.9	30.8	23.5	29.5	22.7
September	33.1	-	36.1	20.4	NA	NA	36.8	21.4	34.0	21.9	NA	NA	31.3	22.6
October	33.1	-	36.6	14.9	34.9	15.9	36.0	13.9	32.5	13.4	NA	NA	30.7	18.5
November	-	-	33.6	11.9	33.4	11.9	34.0	10.4	33.0	9.9	NA	NA	27.4	13.7
December	-	-	33.6	6.9	29.9	7.4	31.5	7.9	28.0	8.4	NA	NA	27.2	10.2

Source: Director, Metrological Centre, Bhubaneswar; District Statistical Handbooks of Different Years, Sundargarh.
Note:Max: Maximum; Min.: Minimum

Annexure 1.3: Frequency of Annual Rainfall in Sundargarh District, 1901 to 1950

Rainfall (Range in mm)	No. of Years
1201 to 1300	2
1301 to 1400	3
1401 to 1500	4
1501 to 1600	9
1601 to 1700	9
1701 to 1800	9
1801 to 1900	6
1901 to 2000	2
2001 to 2100	1
2101 to 2200	-
2201 to 2300	2

Source: Gazetteer of India, Odisha District Gazetteers, Sundargarh, 1975

Annexure 1.4: Year-wise Normal and Actual Rainfall in Sundargarh District

Year	Rainfall (mm)		Number of Rainfall Increase/Decrease (mm)	Percent of Rainfall Increase/Decrease (mm)
	Normal	Actual		
2002	1,482.2	1,005.5	476.7 (-)	32.2 (-)
2003	1,482.2	1,658.7	176.5 (+)	11.9 (+)
2004	1,482.2	1,276.0	206.2 (-)	13.9 (-)
2005	1,482.2	1,522.2	40.0 (+)	2.7 (+)
2006	1,482.2	1,682.7	200.5 (+)	13.5 (+)
2007	1,482.2	1,564.2	82.0 (+)	5.5 (+)
2008	1,482.2	1,496.2	14.0 (+)	0.9 (+)
2009	1,482.2	1,076.6	405.6 (-)	27.3 (-)
2010	1,422.4	945.6	451.3 (-)	46.5 (+)
2011	1,422.4	1580.7	158.3 (+)	11.1 (+)
2012	1,422.4	1426.9	19.20 (+)	0.3 (+)
2013	1,422.4	1450.5	28.1(+)	28.1(+)

Source: Statistical Abstract of Odisha (various years), Directorate of Economics and Statistics, Odisha

Annexure 1.5: Month-wise Average Rainfall in Sundargarh District, 2007-2011

Month	Particular	2007	2008	2009	2010	2011
January	Average Rainfall	3.33	20.9	0	1.2	0.2
	Percent of Departure	-78	42	-100	-92	-99
February	Average Rainfall	57.5	17.8	0	2.2	15.1
	Percent of Departure	238	5	-100	-87	-7
March	Average Rainfall	3.8	11.6	0.8	0	2.5
	Percent of Departure	-76	-27	-95	-100	-86
April	Average Rainfall	11.3	18.7	0.9	6.3	78.8
	Percent of Departure	-6	56	-93	-48	447
May	Average Rainfall	30.5	8.5	71	36.1	54
	Percent of Departure	-10	-75	110	7	36
June	Average Rainfall	185	361.1	90.1	139.6	219.3
	Percent of Departure	-23	51	-62	-42	1
July	Average Rainfall	454	446.8	448.6	265.7	288
	Percent of Departure	11	10	10	-35	-22
August	Average Rainfall	583.8	384.8	305.7	276.4	376.1
	Percent of Departure	43	-6	-25	-32	1
September	Average Rainfall	240	275.3	120.7	133.8	558.8
	Percent of Departure	-4	11	-51	-46	157
October	Average Rainfall	22.7	27.1	89.1	56.9	27.5
	Percent of Departure	-66	-59	33	-15	-45
November	Average Rainfall	59.9	0.1	22.2	10.2	0
	Percent of Departure	970	-98	296	82	-100
December	Average Rainfall	0	0	0	42.7	0
	Percent of Departure	-100	-100	-100	1054	-100

Source: India Meteorological Department and Statistical Handbook of the District (Various Years).

Annexure 1.6: Year-wise Small Scale, Cottage, and Handloom Industries in Sundargarh District

Year	Small Scale Industries			Cottage Industries			Handloom Industries		
	No. of Units	Total capital investment (in lakhs)	Employment Generated (in no.)	No. of Units	Total capital Investment (in lakhs)	Employment Generated (in no.)	No. of Units	Production (in lakh sq. Mt.)	Employment Generated (in no.)
2004-05	482	3,350.22	2,786	620	117.34	861	824	0.96	338
2005-06	540	4,436.42	3,757	532	117.90	836	824	0.91	338
2006-07	457	2,896.25	2,147	316	258.47	1,062	824	1.67	338
2007-08	395	5,840.58	2,109	283	38.30	321	134	1.57	268
2008-09	407	2,564.14	1,589	16	3.75	16	128	1.29	256

Source: Directorate of Industries, Directorate of Textile and Directorate of Handicrafts & Cottage Industries

Annexure 1.7: Block-wise Types of Road and Its Length in Sundargarh District, 2013

SL. No.	Name of Block	CC Road		Black Top Road		Metal Road		Muroom Road		Earth Road		Total
		G.P.	P.S.	G.P.	P.S.	G.P.	P.S.	G.P.	P.S.	G.P.	P.S.	
1	Balisankara	40.000	32.000	0.000	0.000	35.000	40.000	40.000	50.000	35.000	60.000	332.000
2	Bargaon	30.500	17.800	18.000	0.000	6.500	18.000	123.500	46.500	313.400	29.500	603.700
3	Bisra	79.310	0.600	25.450	1.000	7.150	0.000	92.650	0.000	286.080	10.000	502.240
4	Bonaigarh	36.800	4.200	3.000	6.000	5.000	6.000	42.000	41.000	290.000	259.500	693.500
5	Gurundia	20.880	16.200	0.000	8.200	0.000	3.500	72.920	68.800	259.150	274.300	723.950
6	Hemgiri	58.000	33.000	0.000	19.000	19.000	13.000	208.000	144.000	194.000	123.000	811.000
7	Koinda	16.000	2.290	0.000	2.000	60.000	18.500	220.068	145.000	300.000	276.480	1,040.338
8	Kuanarmunda	64.200	39.350	0.000	16.600	1.300	9.500	112.300	20.700	316.200	62.250	642.400
9	Kutra	75.000	0.000	0.000	3.300	0.000	30.000	85.000	56.700	133.000	46.000	429.000
10	Lahunipada	45.530	5.500	0.000	26.050	0.000	5.000	129.610	35.000	394.750	313.000	954.440
11	Lathikata	60.500	4.500	7.000	16.000	10.800	12.200	101.500	34.500	421.700	20.300	689.000
12	Lephipada	49.510	3.450	0.000	0.000	0.000	46.350	62.200	102.600	268.400	105.200	637.710
13	Nuagaon	47.475	12.250	0.000	2.000	0.000	10.000	233.500	76.000	115.000	76.000	572.225
14	Rajgangpur	107.770	0.000	1.500	3.000	2.200	7.000	60.900	3.500	246.900	18.000	450.770
15	Subdega	20.650	3.500	1.500	0.000	9.500	9.000	130.900	76.250	76.700	32.250	360.250
16	Sundargarh	48.000	11.600	2.050	18.300	41.750	40.550	142.000	95.000	349.300	147.400	895.950
17	Tangarpalli	56.500	17.000	0.000	4.500	80.600	32.500	40.000	12.000	93.500	8.600	345.200
	Total	856.625	203.240	58.500	125.950	278.800	301.100	1,897.048	1007.550	4,093.080	1,861.780	10,683.673

Source: District Pandhaya Officer, Sundargarh, 2010. Note: CC-Concrete and Cement.

Note: Category of GP and PS Road Status as on 31.3.2010.

Annexure 1.8: Socio-Economic and Demographic Profile of the Sundargarh District and Odisha, 1991-2011

Description	Sundargarh			Odisha		
	1991	2001	2011	1991	2001	2011
Total Population	15,73,617	18,30,673	20,93,437	3,16,59,736	36,804,660	419,74,218
Male Population	8,12,707	9,35,601	10,61,147	1,60,64,146	18,660,570	212,12,136
Female Population	7,60,910	8,95,072	10,32,290	1,55,95,590	18,144,090	207,62,082
Decadal Growth Rate (in %)	NA	16.34	14.35	20.05	16.25	14.05
Geographical Area (in Sq. Km)	9,712	9,712	9,712	1,55,707	1,55,707	1,55,707
Density of Population (per sq km)	162	188	216	188	236	270
Scheduled Tribe Population (in %)	50.7	50.19	50.75	22.2	22.1	22.8
Scheduled Caste Population (in %)	8.8	8.61	9.16	16.2	16.5	17.1
Rural Population (in %)	66.6	65.6	64.7	86.6	85.0	83.3
Urban Population (in %)	33.4	34.4	35.3	13.4	15.0	16.7
Sex Ratio (females per 1000 males)	936	957	973	971	972	979
Literacy Rate	53.0	64.86	73.34	49.1	63.1	72.9
Male Literacy Rate	65.4	75.34	81.01	63.1	75.3	81.6
Female Literacy Rate	39.6	53.88	65.48	34.7	50.5	64.0
Total Child Population (0-6 Years)	2,63,819	2,64,988	2,63,160	53,47,501	53,58,810	52,73,194
Male Population (0-6 Years)	-	1,34,537	1,35,204	-	27,44,552	27,16,497
Female Population (0-6 Years)	-	1,30,451	1,27,956	-	26,14,258	25,56,697
Child Sex Ratio (0-6 Years)	967	970	946	967	953	941

Source: Census of India, 1991, 2001 and 2011

Annexure 3.1: Status of HIV/AIDS Cases by Districts in Odisha: 2013-14

S. No.	Name of Districts	HIV Positive Cases (No.)			Percent	AIDS Cases (No.)	Percent	AIDS Deaths (No.)	Percent
		Gen.	ANC	Total					
1	Angul	986	97	1,083	3.4	66	4.0	62	4.4
2	Balangir	680	48	728	2.3	59	3.6	59	4.2
3	Balesore	917	55	972	3.1	56	3.4	56	4.0
4	Bargarh	424	35	459	1.5	9	0.6	9	0.6
5	Baudh	23	4	27	0.1	4	0.2	4	0.3
6	Bhadrak	586	42	628	2.0	78	4.8	76	5.4
7	Cuttack	4,051	76	4,127	13.1	119	7.3	46	3.3
8	Deogarh	53	11	64	0.2	2	0.1	2	0.1
9	Dhenkanal	207	19	226	0.7	18	1.1	16	1.1
10	Gajapati	587	64	651	2.1	7	0.4	6	0.4
11	Ganjam	10,840	586	11,426	36.2	514	31.5	444	31.5
12	Jagatsinghpur	163	15	178	0.6	18	1.1	18	1.3
13	Jajpur	353	17	370	1.2	52	3.2	50	3.5
14	Jharsuguda	190	18	208	0.7	13	0.8	11	0.8
15	Kalahandi	556	14	570	1.8	6	0.4	6	0.4
16	Kandhamal	81	5	86	0.3	17	1.0	14	1.0
17	Kendrapara	307	29	336	1.1	75	4.6	74	5.2
18	Keonjhar	301	16	317	1.0	6	0.4	6	0.4
19	Khurda	1,387	70	1,457	4.6	56	3.4	48	3.4
20	Koraput	1,665	83	1,748	5.5	159	9.7	149	10.6
21	Malkangiri	165	10	175	0.6	11	0.7	6	0.4
22	Mayurbhanj	531	50	581	1.8	30	1.8	27	1.9
23	Nabrangpur	622	25	647	2.1	22	1.3	20	1.4
24	Nayagarh	690	31	721	2.3	9	0.6	8	0.6
25	Nuapada	355	11	366	1.2	19	1.2	19	1.3
26	Puri	628	19	647	2.1	73	4.5	66	4.7
27	Rayagada	609	43	652	2.1	67	4.1	52	3.7
28	Sambalpur	1,469	56	1,525	4.8	39	2.4	33	2.3
29	Sonepur	60	3	63	0.2	0	0.0	0	0.0
30	Sundergarh	460	32	492	1.6	28	1.7	23	1.6
	Odisha	29,946	1,584	31,530	100.0	1,632	100.0	1,410	100.0

Source: Odisha State AIDS Control Society.

Annexure 3.2: Status of Maternal Mortality Ratio by Districts in Odisha: 2010-11 to 2012-13

S. No.	Name of District	AHS-1 (2010-11)	AHS-2 (2011-12)	AHS-3 (2012-13)
1	Anugul	253	212	234
2	Balangir	253	212	234
3	Baleshwar	276	222	218
4	Bargarh	253	212	234
5	Baudh	311	297	245
6	Bhadrak	276	222	218
7	Cuttack	276	222	218
8	Debagarh	253	212	234
9	Dhenkanal	253	212	234
10	Gajapati	311	297	245
11	Ganjam	311	297	245
12	Jagatsinghpur	276	222	218
13	Jajapur	276	222	218
14	Jharsuguda	253	212	234
15	Kalahandi	311	297	245
16	Kandhamal	311	297	245
17	Kendrapara	276	222	218
18	Kendujhar	253	212	234
19	Khordha	276	222	218
20	Koraput	311	297	245
21	Malkangiri	311	297	245
22	Mayurbhanj	276	222	218
23	Nabarangapur	311	297	245
24	Nayagarh	276	222	218
25	Nuapada	311	297	245
26	Puri	276	222	218
27	Rayagada	311	297	245
28	Sambalpur	253	212	234
29	Sonapur	253	212	234
30	Sundargarh	253	212	234
	Odisha	277	237	230

Source: AHS-1, 2010-11; AHS-2, 2011-12; AHS-3, 2012-13, Odisha.

Annexure 3.3: Status of Household Latrines, Anganwadi & School Toilets by Districts in Odisha: 2013-14

S. No.	Name of District	Household Latrines			School Toilets			Anganwadi Toilets		
		Target (No.)	Achievement (No.)	Achievement (per-cent)	Target (No.)	Achievement (No.)	Achievement (per-cent)	Target (No.)	Achievement (No.)	Achievement (per-cent)
1	Angul	186,809	99,312	53.2	2,040	2,044	100.0	795	795	100.0
2	Bolangir	342,234	145,932	42.6	2,400	2,400	100.0	915	915	100.0
3	Balasore	384,003	365,212	95.1	3,787	3,999	105.6	1,849	1,863	100.8
4	Baragarh	315,882	195,136	61.8	2,393	2,443	102.1	361	388	107.5
5	Bhadrak	218,481	130,928	59.9	1,855	1,844	99.4	1,190	1,109	93.2
6	Boudh	92,672	51,330	55.4	1,033	1,015	98.3	258	258	100.0
7	Cuttack	364,874	227,568	62.4	2,426	2,489	102.6	42	155	369.0
8	Deogarh	62,958	40,606	64.5	620	664	107.1	190	221	116.3
9	Dhenkanal	190,307	98,662	51.8	2,065	2,065	100.0	690	684	99.1
10	Gajapati	110,192	47,279	42.9	1,438	1,349	93.8	630	611	97.0
11	Ganjam	451,316	279,175	61.9	4,235	4,235	100.0	2,505	2,505	100.0
12	Jagatsinghpur	212,333	181,294	85.4	2,434	2,434	100.0	955	955	100.0
13	Jajpur	354,399	203,493	57.4	3,414	3,414	100.0	1,355	1,355	100.0
14	Jharsuguda	67,929	37,625	55.4	811	811	100.0	433	433	100.0
15	Kalahandi	296,373	159,560	53.8	2,330	2,330	100.0	676	676	100.0
16	Kandhamal	155,540	39,538	25.4	1,812	1,793	99.0	937	652	69.6
17	Kendrapara	216,192	151,167	69.9	2,583	2,627	101.7	1,064	1,065	100.0
18	Keonjhar	263,448	98,384	37.3	5,428	5,184	95.5	1,590	820	51.6
19	Khurda	230,593	135,169	58.6	2,431	2,431	100.0	150	184	122.7
20	Koraput	264,201	108,790	41.2	2,659	2,604	97.4	1,130	1,013	89.6
21	Malkangiri	131,708	85,700	65.1	1,650	1,635	99.1	534	522	97.8
22	Mayurbhanj	562,768	326,101	57.9	4,642	4,642	100.0	1,698	1,894	111.5
23	Nabrangpur	254,495	93,140	36.6	1,838	2,281	124.1	378	961	254.2
24	Nayagarh	207,312	108,149	52.2	1,993	1,993	100.0	34	552	1623.5
25	Nuapada	128,790	60,694	47.1	941	941	100.0	585	585	100.0
26	Puri	231,132	130,888	56.6	2,250	2,205	98.0	1,130	1,138	100.7
27	Rayagada	212,204	74,246	35.0	2,931	2,192	74.8	1,001	479	47.9
28	Sambalpur	148,615	74,706	50.3	2,217	2,217	100.0	480	480	100.0
29	Sonepur	107,118	64,867	60.6	1,563	1,587	101.5	214	214	100.0
30	Sundargarh	291,770	169,396	58.0	2,444	2,821	115.4	1,391	1,496	107.5
	Odisha	7,056,648	3,984,047	56.5	70,663	70,689	100.0	25,160	24,978	99.3

Source: OSWSM.

Annexure 5.1: Sex Ratio in Odisha, 1901-2011

S. No.	Name of District	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
1	Anugul	-	-	-	-	-	-	-	-	-	-	941	958
2	Balangir	1,042	1,030	1,028	1,025	1,020	1,010	1,000	993	992	980	984	987
3	Baleshwar	1,065	1,087	1,098	1,058	1,024	989	974	972	977	967	953	957
4	Bargarh	-	-	-	-	-	-	-	-	-	-	976	977
5	Baudh	-	-	-	-	-	-	-	-	-	-	984	991
6	Bhadrak	-	-	-	-	-	-	-	-	-	-	974	981
7	Cuttack	1,068	1,101	1,159	1,112	1,084	1,025	999	986	972	962	938	940
8	Debagarh	-	-	-	-	-	-	-	-	-	-	980	975
9	Dhenkanal	1,020	1,035	1,074	1,053	1,030	1,017	991	977	958	948	961	947
10	Gajapati	-	-	-	-	-	-	-	-	-	-	1,031	1,043
11	Ganjam	1,119	1,159	1,223	1,191	1,169	1,113	1,082	1,042	1,031	1,009	998	983
12	Jagatsinghpur	-	-	-	-	-	-	-	-	-	-	963	968
13	Jajpur	-	-	-	-	-	-	-	-	-	-	972	973
14	Jharsuguda	-	-	-	-	-	-	-	-	-	-	946	953
15	Kalahandi	1,004	1,024	1,031	1,035	1,035	1,019	1,020	1,010	1,010	1,000	1,001	1,003
16	Kendrapara	-	-	-	-	-	-	-	-	-	-	1,014	1,007
17	Kendujhar	983	1,004	1,032	1,028	1,011	995	982	977	983	974	977	988
18	Khordha	-	-	-	-	-	-	-	-	-	-	902	929
19	Koraput	966	998	1,000	1,004	996	991	990	980	993	994	999	1,032
20	Mayurbhanj	1,013	1,011	1,015	1,011	1,005	1,001	911	987	989	979	980	1,006
21	Nabarangpur	-	-	-	-	-	-	-	-	-	-	991	1,019
22	Nayagarh	-	-	-	-	-	-	-	-	-	-	938	915
23	Nuapada	-	-	-	-	-	-	-	-	-	-	1,007	1,021
24	Phulbani	1,013	1,013	1,018	1,022	1,021	1,015	1,012	1,004	999	995	1,008	1,037
25	Puri	1,009	1,023	1,097	1,078	1,082	1,028	1,004	977	960	939	968	963
26	Rayagada	-	-	-	-	-	-	-	-	-	-	1,028	1,051
27	Sambalpur	1,018	1,029	1,033	1,044	1,035	1,009	995	977	972	966	969	976
28	Subarnapur	-	-	-	-	-	-	-	-	-	-	966	960
29	Sundargarh	959	988	1,004	1,013	1,017	1,012	915	942	931	936	957	973
30	Malkangiri	-	-	-	-	-	-	-	-	-	-	997	1,020
	Odisha	1,037	1,056	1,086	1,067	1,053	1,022	1,001	988	981	971	972	979

Annexure 6.1: Difference in Actual and Normal Rainfall in Sundargarh District by Block for Different Years

S. No.	Name of Blocks	1999			2001			2005			2007		
		Normal Rainfall	Actual Rainfall	Difference	Normal Rainfall	Actual Rainfall	Difference	Normal Rainfall	Actual Rainfall	Difference	Normal Rainfall	Actual Rainfall	Difference
1	Balisankara	1,647.6	1,357.0	-290.6	1,647.6	1,319.0	-328.6	1,647.6	1,013.0	-634.6	1,647.6	1,096.0	-551.6
2	Baragoon	1,647.6	968.0	-679.6	1,647.6	1,107.0	-540.6	1,647.6	1,036.0	-611.6	1,647.6	1,072.3	-575.3
3	Bistra	1,647.6	1,068.9	-578.7	1,647.6	294.6	-1353	1,647.6	842.9	-804.7	1,647.6	1,166.5	-481.1
4	Banaigarh	1,647.6	2,710.0	1062.4	1,647.6	2,628.5	980.9	1,647.6	1,043.5	-604.1	1,647.6	1,351.6	-296
5	Gurundia	1,647.6	1,663.8	16.2	1,647.6	1,971.2	323.6	1,647.6	1,233.3	-414.3	1,647.6	1,497.6	-150
6	Hemagiri	1,647.6	1,382.0	-265.6	1,647.6	1,736.6	89	1,647.6	1,564.2	-83.4	1,647.6	1,245.1	-402.5
7	Koira	1,647.6	2,146.4	498.8	1,647.6	1,967.5	319.9	1,647.6	1,512.9	-134.7	1,647.6	1,174.4	-473.2
8	Kuanramunda	1,647.6	2,139.4	491.8	1,647.6	2,405.5	757.9	1,647.6	1,029.2	-618.4	1,647.6	1,366.0	-281.6
9	Kutra	1,647.6	1,123.5	-524.1	1,647.6	205.5	-1442.1	1,647.6	1,004.3	-643.3	1,647.6	1,321.6	-326
10	Lahunipada	1,647.6	1,881.2	233.6	1,647.6	2,432.1	784.5	1,647.6	1,315.9	-331.7	1,647.6	1,468.2	-179.4
11	Lathikata	1,647.6	1,767.7	120.1	1,647.6	1,996.5	348.9	1,647.6	1,052.3	-595.3	1,647.6	1,459.0	-188.6
12	Lephipara	1,647.6	2,485.0	837.4	1,647.6	163.0	-1484.6	1,647.6	1,310.5	-337.1	1,647.6	970.0	-677.6
13	Nuagaon	1,647.6	1,282.5	-365.1	1,647.6	1,747.8	100.2	1,647.6	919.0	-728.6	1,647.6	1,035.9	-611.7
14	Rajagangpur	1,647.6	640.9	-1006.7	1,647.6	202.8	-1444.8	1,647.6	1,071.8	-575.8	1,647.6	1,257.0	-390.6
15	Subdega	1,647.6	1,152.3	-495.3	1,647.6	995.0	-652.6	1,647.6	1,174.6	-473	1,647.6	999.0	-648.6
16	Sundargarh	1,647.6	856.1	-791.5	1,647.6	1,605.1	-42.5	1,647.6	1,398.6	-249	1,647.6	1,115.6	-532
17	Tangarpalli	1,647.6	774.8	-872.8	1,647.6	1,158.3	-489.3	1,647.6	1,009.2	-638.4	1,647.6	1,040.0	-607.6

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