सत्यमेव जयते

National River Conservation Directorate
Department of Water Resources, River Development & Ganga Rejuvenation
Ministry of Jal Shakti
Government of India

DEMOGRAPHY OF MAHANADI RIVER BASIN

SEPTEMBER 2024

Centres for Mahanadi River Basin Management Studies
(cKrishna)

cGanga
Centre for Ganga River Basin Management and Studies
(cGanga)

DEMOGRAPHY OF MAHANADI RIVER BASIN

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NATIONAL RIVER CONSERVATION DIRECTORATE (NRCD)

The National River Conservation Directorate, functioning under the Department of Water Resources, River Development & Ganga Rejuvenation, and Ministry of Jal Shakti providing financial assistance to the State Government for conservation of rivers under the Centrally Sponsored Schemes of 'National River Conservation Plan (NRCP)'. National River Conservation Plan to the State Governments/ local bodies to set up infrastructure for pollution abatement of rivers in identified polluted river stretches based on proposals received from the State Governments/ local bodies.

www.nrcd.nic.in

CENTRES FOR MAHANADI RIVER BASIN MANAGEMENT STUDIES (cMAHANADI)

The Centres for Mahanadi River Basin Management Studies (cMahanadi) is a Brain Trust dedicated to River Science and River Basin Management. Established in 2024 by NIT Raipur and NIT Rourkela, under the supervision of cGanga at IIT Kanpur, the centre serves as a knowledge wing of the National River Conservation Directorate (NRCD). cMahanadi is committed to restoring and conserving the Mahanadi River and its resources through the collation of information and knowledge, research and development, planning, monitoring, education, advocacy, and stakeholder engagement.

www.cgodavari.org

CENTRE FOR GANGA RIVER BASIN MANAGEMENT AND STUDIES (cGANGA)

cGanga is a think tank formed under the aegis of NMCG, and one of its stated objectives is to make India a world leader in river and water science. The Centre is headquartered at IIT Kanpur and has representation from most leading science and technological institutes of the country. cGanga's mandate is to serve as think-tank in implementation and dynamic evolution of Ganga River Basin Management Plan (GRBMP) prepared by the Consortium of 7 IITs. In addition to this, it is also responsible for introducing new technologies, innovations, and solutions into India.

www.cganga.org

ACKNOWLEDGMENT

This report is a comprehensive outcome of the project jointly executed by NIT Raipur (Lead Institute) and NIT Rourkela (Fellow Institute) under the supervision of cGanga at IIT Kanpur. It was submitted to the National River Conservation Directorate (NRCD) in 2024. We gratefully acknowledge the individuals who provided information and photographs for this report.

SUGGESTED CITATION

cMahanadi and cGanga (2024), Demography of Mahanadi River Basin, NRCD, DoWR, RD & GR, Ministry of Jal Shakti, Government of India

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संदेश

मानव सभ्यता का विकास नदियों के किनारे हुआ है, और इसे सुरक्षित रखने के लिए नदियों का संरक्षण अत्यंत आवश्यक है। भारत की नदियों के स्वास्थ और सुरक्षा के लिए 2019 में संसद के संयुक्त सत्र में राष्ट्रपति ने गंगा नदी के उदाहरण पर अन्य प्रमुख नदियों के बेसिन प्रबंधन की आवश्यकता पर बल दिया था। इस उद्देश्य की पूर्ति हेतु छह प्रमुख नदियों के बेसिन प्रबंधन में सी–गंगा के समग्र समन्वय से 12 प्रतिष्ठित शैक्षणिक संस्थाओं को शामिल करने का निर्णय लिया गया। राष्ट्रीय नदी संरक्षण निदेशालय द्वारा संचालित कंडीशन एसेसमेंट एंड मैनेजमेंट प्लान (कैंप) प्रोजेक्ट नदियों के समग्र बेसिन प्रबंधन को साकार करने का प्रयास है।

नदियों के संरक्षण और उनके प्रबंधन के लिए इस तरह की पहल से न केवल हमारे प्राकृतिक संसाधनों का बचाव होगा, बल्कि स्थानीय समुदायों के जीवन और संस्कृति को भी संरक्षित किया जा सकेगा। यह अत्यंत हर्ष का भविष्य है कि इस प्रोजेक्ट के तहत तैयार की गई ''रिवर एट ए ग्लांस'' रिपोर्ट का लोकार्पण होने जा रहा है। जैसे किसी व्यक्ति के बाह्य स्वरूप से उसकी पुरी पहचान नहीं होती, वैसे ही नदी के व्यवहार और चुनौतियों को सिर्फ मुख्यधारा से नही समझा जा सकता। इसके लिए नदी के इतिहास, उसके किनारे बसे नगरों और गांवों की संस्कृति, सहायक नदियों और उस क्षेत्र के भूगोल को भी समझाना पड़ता है। इसी रिपोर्ट के जरिए नदी की पूरी प्रकृति, उसकी चुनौतियाँ, सहायक नदियां और आसपास के क्षेत्रों की सांस्कृतिक–भौगोलिक स्थिति को समझने के जो कोशिश की गई है, वह बहुत महत्वपूर्ण है।

हमें विश्वास है कि यह रिपोर्ट नदी, जल और पर्यावरण के क्षेत्र में काम करने वाले व्यक्तियों, संस्थाओं और हितकारकों के लिए अत्यधिक उपयोगी साबित होगी। रिपोर्ट के प्रकाशन और लोकार्पण के इस विशेष अवसर पर बधाई।

सीआर पाटील

सत्यमेव जयते

जल शक्ति राज्य मंत्री
भारत सरकार, नई दिल्ली

Minister of State for Jal Shakti
Government of India, New Delhi

संदेश

नदियां हमारे जीवन के लिए अत्यावश्यक संसाधन हैं और उनका पर्यावरणीय, सामाजिक, और आर्थिक महत्व भी बहुत अधिक है। नदियों का संरक्षण भविष्य की पीढ़ियों के लिए जीवन की गुणवत्ता सुनिचित करने की दिशा में एक महत्वपूर्ण कदम है। देश की छह प्रमुख नदियों के बेसिन प्रबंधन के लिए शीर्ष तकनीकी शिक्षण संस्थाओं के सहयोग से राष्ट्रीय नदी संरक्षण निदेशालय का कैंप (कंडीशन एसेसमेंट एंड मैनेजमेंट प्लान) प्रोजेक्ट संरक्षण के लिए वर्तमान सरकार की प्रतिबद्ता दर्शाता है। भारत सरकार के नमामि गंगे मिशन के अंतर्गत किये प्रयासों से आज गंगा नदी के पुनर्जीवन को वैशिक मान्यता मिल चुकी है। उम्मीद है की ऐसी ही सफलता हमें कैंप प्रोजेक्ट में भी मिलेगी।

रिवर बेसिन जनसांखियकी (डेमोग्राफिक) रिपोर्ट को देखकर हार्दिक प्रसन्नता हुई। कम समय में विस्तृत रिपोर्ट तैयार करने के लिए सभी सदस्यों को बधाई। जनसंख्यिकी रिपोर्ट न केवल हमें वर्तमान के बारे में अवगत कराता है, बल्कि इस रिपोर्ट को देखकर भविष्य की चुनौतियों और अपेक्षाओं का भी अनुमान लगाया जा सकता है। यह रिपोर्ट शासन, प्रशासन शिक्षण के लिए एक अहम् दस्तावेज है।

डा. राज भूषण चौधरी

PREFACE

In an era of unprecedented environmental change, understanding our rivers and their ecosystems has never been more critical. This report aims to provide a comprehensive overview of our rivers, highlighting their importance, current health, and the challenges they face. As we explore the various facets of river systems, we aim to equip readers with the knowledge necessary to appreciate and protect these vital waterways.

Throughout the following pages, you will find an in-depth analysis of the principles and practices that support healthy river ecosystems. Our team of experts has meticulously compiled data, case studies, and testimonials to illustrate the significant impact of rivers on both natural environments and human communities. By sharing these insights, we hope to inspire and empower our readers to engage in river conservation efforts.

This report is not merely a collection of statistics and theories; it is a call to action. We urge all stakeholders to recognize the value of our rivers and to take proactive steps to ensure their preservation. Whether you are an environmental professional, a policy maker, or simply someone who cares about our planet, this guide is designed to support you in your efforts to protect our rivers.

We extend our heartfelt gratitude to the numerous contributors who have generously shared their stories and expertise. Their invaluable input has enriched this report, making it a beacon of knowledge and a practical resource for all who read it. It is our hope that this report will serve as a catalyst for positive environmental action, fostering a culture of stewardship that benefits both current and future generations.

As you delve into this overview of our rivers, we invite you to embrace the opportunities and challenges that lie ahead. Together, we can ensure that our rivers continue to thrive and sustain life for generations to come.

cMahanadi and cGanga

CONTENT

ABBREVIATIONS AND ACRONYMS

cMahanadi	Centre for Mahanadi River Basin Management and Studies
MRB	Mahanadi River Basin
C.G.	Chhattisgarh
ULB	Urban Local Body
Sq	Square
HHs	Households
CCOST	Chhattisgarh Council of Science & Technology
IMR	Infant Mortality Rate
WPR	Workforce Participation Ratio
CAGR	Compound Annual Growth Rate
GSDP	Gross State Domestic Product
GDP	Gross Domestic Product
OG	Urban Out-Growths
NAC	Notified Area Councils
M	Municipality
MC	Municipal Committee
BE	Budget Estimates
RE	Revised Estimates
PWSS	Pipe Water Supply Scheme
TW	Tube Well

1. Basin Overview

"Basin demography" typically refers to the study of population characteristics and dynamics within a specific drainage basin or watershed. Population statistics are crucial for understanding and planning in various aspects of societal development, including healthcare, education, infrastructure, and resource allocation. These statistics provide insights into the size, distribution, and composition of populations, enabling policymakers to address the needs of diverse demographic groups effectively. Basin demography provides a comprehensive framework for integrating human and environmental considerations in planning and policymaking.

Understanding population dynamics helps in the efficient management of water and other natural resources within the basin. Identifying human impacts on the basin can aid in developing strategies for conservation. Knowledge of population distribution can improve disaster preparedness and response, particularly for floods and droughts. Insights into demographic trends support economic development plans tailored to the needs and capacities of the basin's population.

Gathering accurate and comprehensive demographic data for large or remote basins can be difficult and expensive. The interactions between human populations and environmental factors are complex and multifaceted, making it challenging to draw clear conclusions or predict outcomes. Basin demographic analysis can become a powerful tool for promoting sustainable development, enhancing resilience, and improving the quality of life for populations living within the basin.

This report incorporates the basin demography analysis of Mahanadi River Basin which forms an integral hydrological and ecological region of India, spans majorly in Chhattisgarh (52.42%) and Odisha (47.14%), with minor parts extending into Maharashtra (0.23%), Madhya Pradesh (0.11%), and Jharkhand (0.1%). The outputs can help policymakers, researchers, and local communities make informed decisions to promote sustainable development and environmental stewardship within the basin.

1.1. Mahanadi Basin: State of Chhattisgarh& Odisha

The Mahanadi River originates in the Sihawa hills of the Dhamtari district in the state of Chhattisgarh, India. It begins at an elevation of about 442 meters (1,450 feet) above sea level and flows through the states of Chhattisgarh and Odisha, before joining the Bay of Bengal. The river is one of the major rivers in central India and plays a crucial role in the agriculture and economy of the regions it traverses. The Mahanadi basin having a total catchment area of 143687.75 sq.km covers 4.37% of the country's total geographical area. The extent of the basin lies between 80°28’ and 86°43’ east longitudes and 19°8’ and 23°32’ north latitudes.

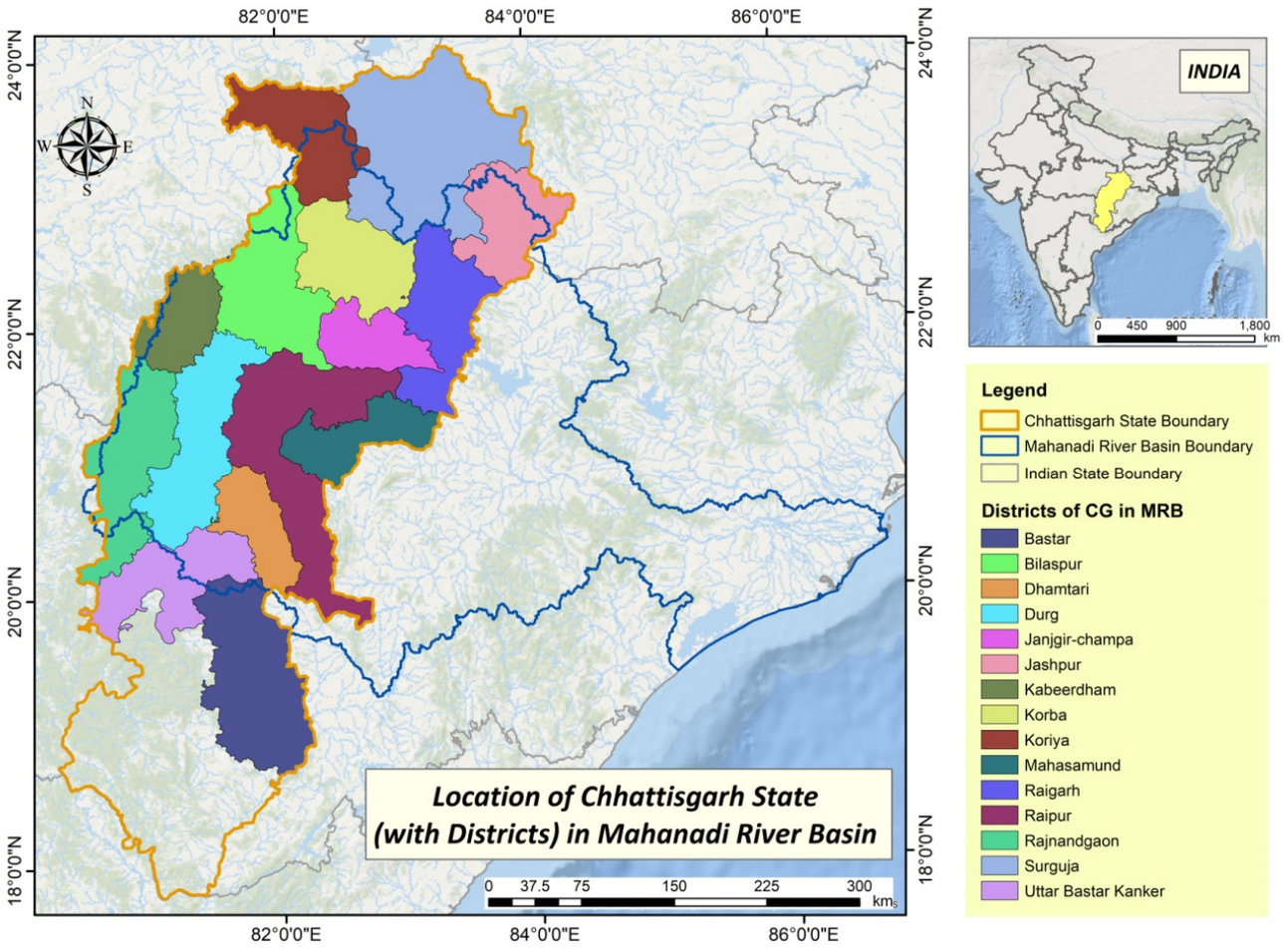


Figure 1. Districts lying within Chhattisgarh State under Mahanadi River Basin

The Mahanadi River and its tributaries drain through 15 districts in Chhattisgarh, forming the basin's initial course as represented in Figure 1. Chhattisgarh is situated between latitudes 17°46'-24°05'N and longitudes 80°15'-84°20'E. A significant portion of the state, approximately 44%, is covered by forests, contributing to its rich biodiversity and natural resources. In the present study, the districts covering the Mahanadi basin have been considered as per the Census 2001-2011.

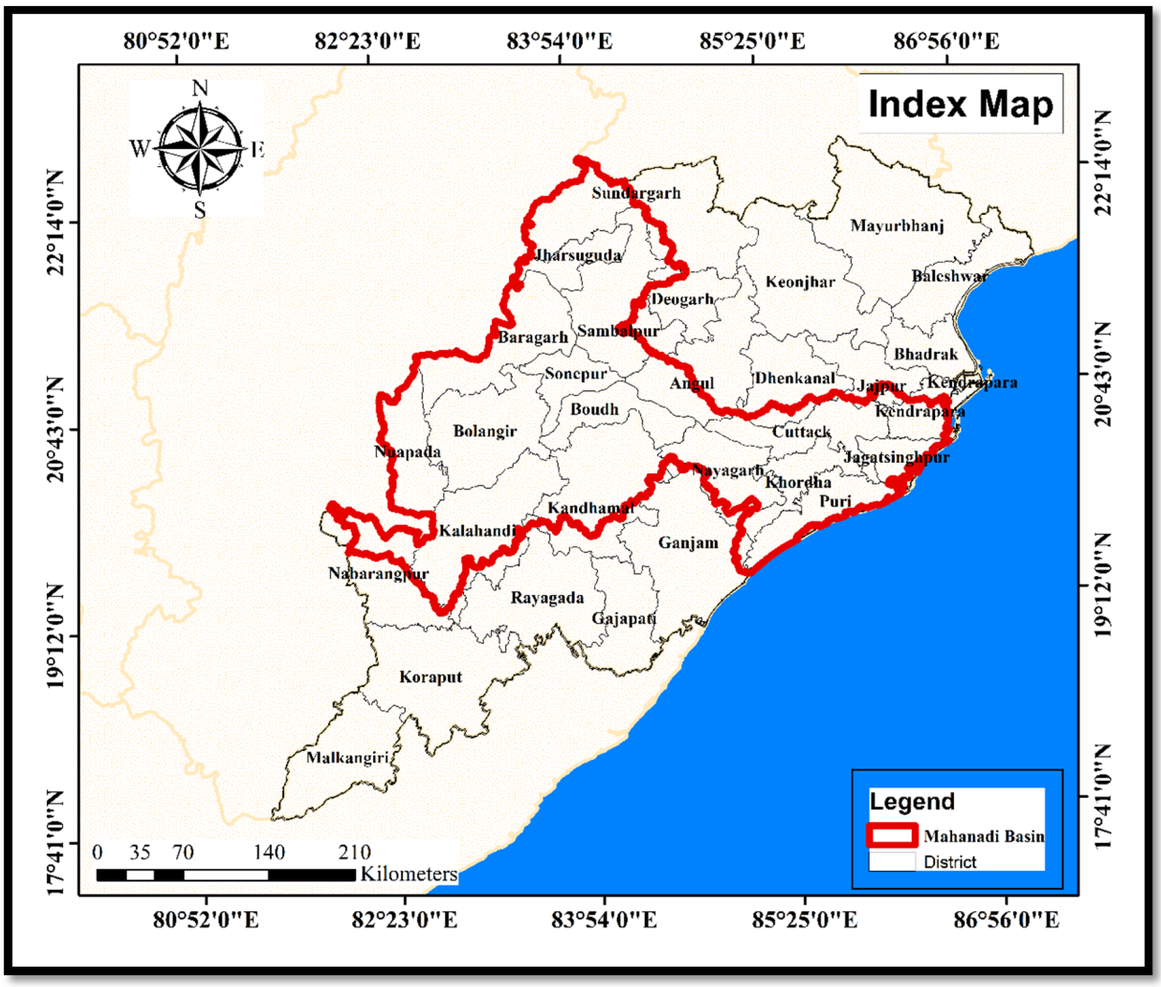


Figure 2. Districts lying within Odisha State under Mahanadi River Basin

The Mahanadi River basin spans numerous districts in Odisha, greatly impacting the region's hydrological and socioeconomic growth. These districts are: Angul, Bargarh, Bolangir, Boudh, Cuttack, Deogarh, Dhenkanal, Jagatsinghpur, Jajpur, Jharsuguda, Kalahandi, Kandhamal, Kendrapara, Khordha, Nayagarh, Nuapada, Puri, Sambalpur, Sonepur, and Sundargarh (Figure 2). The river and its tributaries are critical to agriculture, industry, and daily life in these areas, supplying vital water supplies for irrigation, drinking, and other purposes. The Mahanadi, a major river in India, ranks second among peninsular rivers in terms of water potential and flood-producing capacity, following the Godavari. Numerous tributaries join the Mahanadi along its course. The Seonath, Hasdeo, Mand, and Ib rivers join from the left, while the Ong, Tel, and Jonk rivers join from the right. Agriculture is the predominant land use in the basin, covering 54.27% of the total area, while water bodies account for 4.45%.

1.2. Purpose of the Report

The purpose of this report is to provide a comprehensive analysis of the population characteristics and trends within Mahanadi River basin. The Mahanadi River basin, spanning majorly falling in Chhattisgarh & Odisha plays a crucial role in India's socio-economic and environmental landscape. This report aims to inform policymakers, planners, and

stakeholders about the demographic dynamics that influence resource management, environmental conservation, and sustainable development in the region. By examining factors such as population size, distribution, growth rates, and socio-economic conditions, the report identifies the challenges and opportunities related to water resource allocation, agricultural planning, infrastructure development, and disaster management. Basin demography serves to be a powerful tool for tracking change over time and for uncovering the needs or strengths of a community to guide planning, policy development or decision making.

1.3. Source of data

The data and statistics compiled and examined in this research are based on secondary data gathered from multiple sources which are mentioned in Table 1:

Table 1. Type and Source of data used

S. No.	Type of data	Source
1.	Population data and related statistics	Census 2001-2011, Govt. of India
2.	Chhattisgarh & Odisha demography and economic data	Directorate of Economics and Statistics, Govt. of Chhattisgarh, Census of Orissa and Economic Survey 2014-15
3.	Statistical Abstract of Chhattisgarh& Odisha 2011-12	Directorate of Economics and Statistics, Govt. of Chhattisgarh, Odisha Unorganized Worker's Social Security Board, Planning & Convergence Department, Odisha
4.	Drinking Water, Sanitation, Hygiene and Housing Conditions in Chhattisgarh	Directorate of Economics and Statistics, Govt. of Chhattisgarh, Panchayati raj and drinking water department, government of Odisha
5.	Population Projections for India and States (2011-2036)	Report by National Commission on Population, Ministry of Health & Family Welfare, New Delhi

2. Administrative delineation at various levels within the basin

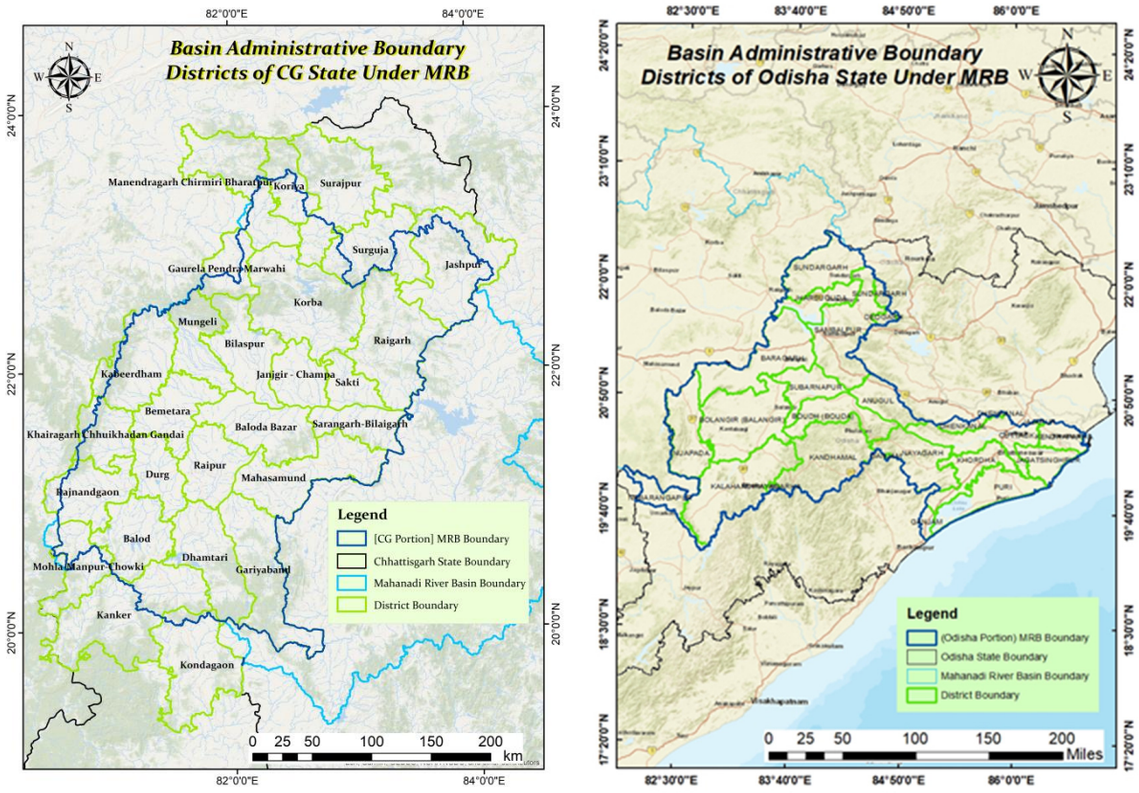
The division of administrative units facilitates effective governance and management by providing a structured approach to addressing developmental, environmental, and demographic challenges. These divisions, which span across Districts, Tehsils, and Villages, ensure organized and efficient administration within the region.

2.1. Maps showing states, districts, blocks, tehsils, panchayats, villages

As of September 2024, the Mahanadi River Basin traverses 28 districts out of the 33 districts in Chhattisgarh. These districts form the core of the basin and play a crucial role in the governance, development, and resource management of the region.

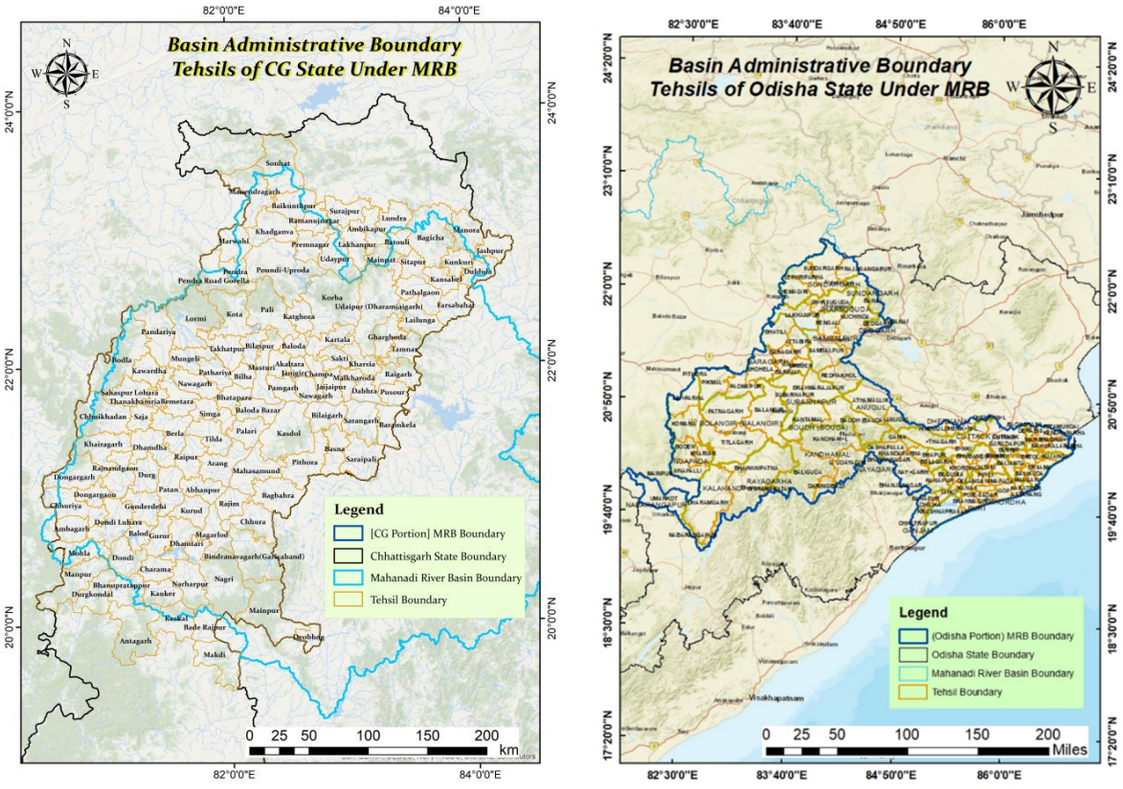
Additionally, the Mahanadi River Basin touches a total of 115 tehsils in Chhattisgarh. These tehsils, or sub-districts, provide a more localized administrative framework for addressing specific developmental and demographic issues within the basin.

Out of a total of 20,242 villages in Chhattisgarh as of September 2024, the Mahanadi River Basin covers 15,184 villages, indicating the vast rural landscape within the basin. These villages rely heavily on the river for agriculture, water supply, and livelihood, making the Mahanadi River a lifeline for both urban and rural communities in the region. Figure 3, 4, 5 & 6 illustrates the administrative boundaries of the Mahanadi River Basin (MRB), covering the states of Chhattisgarh and Odisha, and mapping the districts, tehsils, and villages and blocks within the basin.



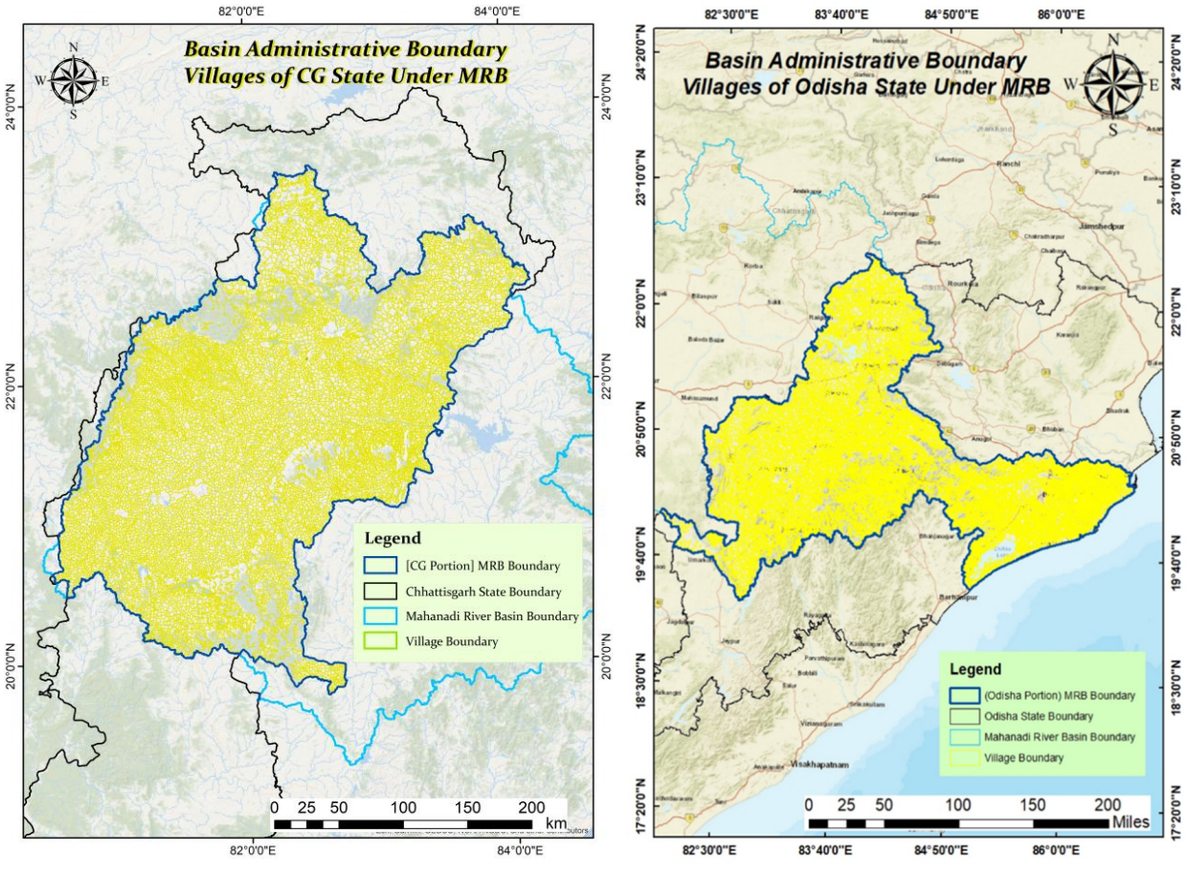
(a) (b)

Figure 3. Administrative boundaries showing Districts of MRB in (a) C.G. (b) Odisha



(a) (b)

Figure 4. Administrative boundaries showing Tehsils of MRB in (a) C.G. (b) Odisha



(a) (b)

Figure 5. Administrative boundaries showing Villages of MRB in (a) C.G. (b) Odisha

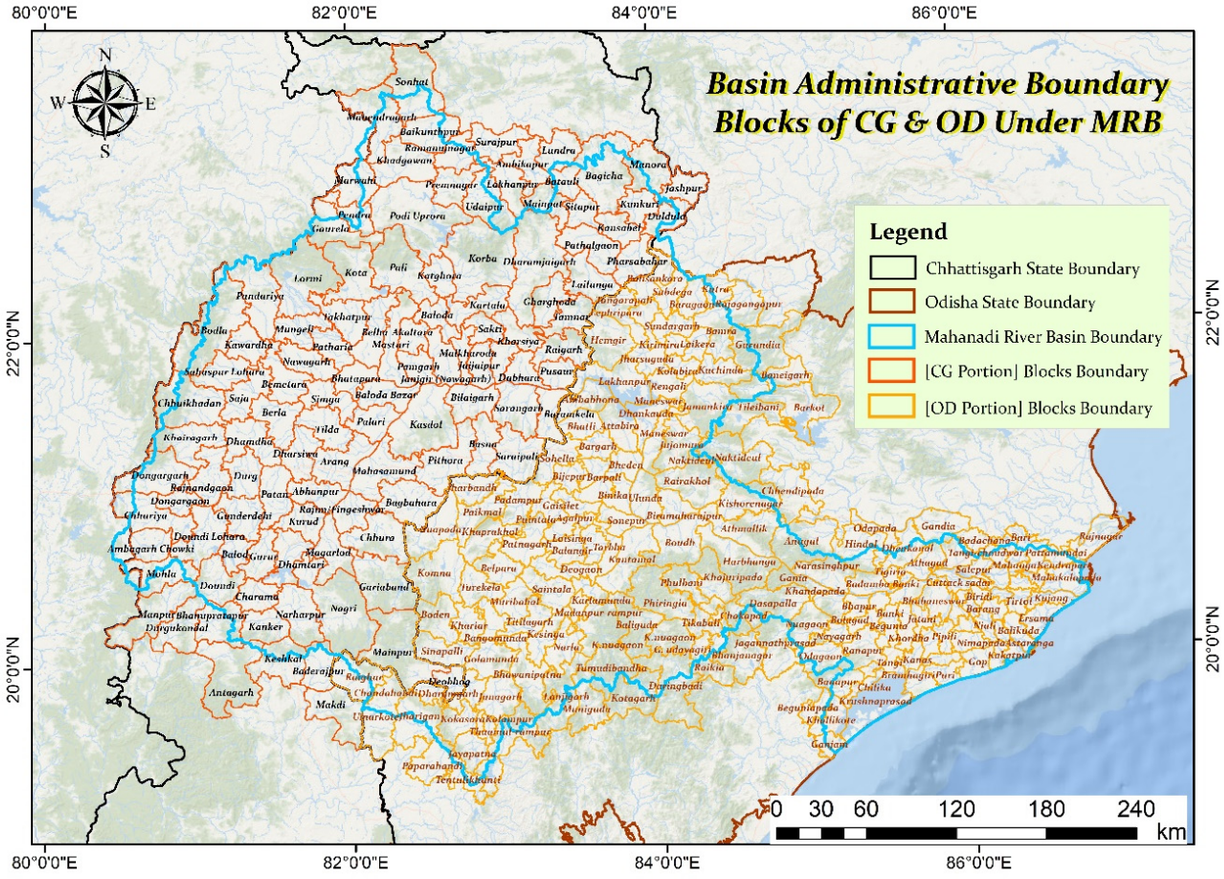


Figure 6. Administrative boundaries showing Blocks of MRB in CG & Odisha

2.2. Map showing Urban Local Bodies (ULBs)

Urban Local Bodies (ULBs) within the Mahanadi River Basin play a crucial role in managing urban infrastructure, water supply, sanitation, and regional development activities. These ULBs include Nagar Nigams (Municipal Corporations), Nagar Palika Parishads (Municipalities), and Nagar Panchayats/ Town Panchayat, which are spread across various urban centres of the Mahanadi River Basin. ULBs are critical for planning and managing urban growth and ensuring sustainable use of river resources.

2.2.1. Chhattisgarh

2.2.1.1. Nagar Nigams (Municipal Corporations) under MRB in Chhattisgarh

There are 12 Nagar Nigams in the Mahanadi River Basin in Chhattisgarh, including major urban centers such as Raipur, Bhilai, and Bilaspur as provided in the Table 2. These Municipal Corporations are responsible for governing larger urban areas with higher population density.

Table 2. List of Nagar Nigams/ Muncipal Corporations under MRB of Chhattisgarh State
(Source - Dept. of Urban Administration and Development, Govt. of CG)

Nagar Nigams/ Muncipal Corporations [Total - 12]					
Bhilai	Bhilai Charoda	Bilaspur	Birgaon	Chirmiri	Dhamtari
Durg	Korba	Raigarh	Raipur	Rajnandgaon	Risali

2.2.1.2. Nagar Palika Parishads (Municipalities) under MRB in Chhattisgarh

There are 38 Nagar Palika Parishads, or Municipalities, within the Mahanadi River Basin in Chhattisgarh as listed in Table 3. These are smaller urban centres compared to Nagar Nigams but still play a significant role in the administration of urban infrastructure and services.

Table 3. List of Nagar Palika Parishad/ Municipalities under MRB of Chhattisgarh State
(Source - Dept. of Urban Administration and Development, Govt. of CG)

Nagar Palika Parishad/ Municipalities [Total - 38]			
Ahivara	Akaltara	Amleshwar	Arang
Bagbahara	Baikunthpur	Balod	Balodabazar
Banki Mongra	Bemetara	Bhatapara	Champa
Dallirajhara	Dipka	Dongargarh	Gariaband
Gobaranawapara	Jamul	Janjgir-Naila	Kanker
Katghora	Kawardha	Khairagarh	Kharshiya
Kumhari	Lorami	Mahasamund	Mandir Hasoud
Manendragarh	Mungeli	Pandaria	Ratanpur
Sakti	Saraipali	Sarangarh	Shivpurcharcha
Takhatpur	Tildanevra		

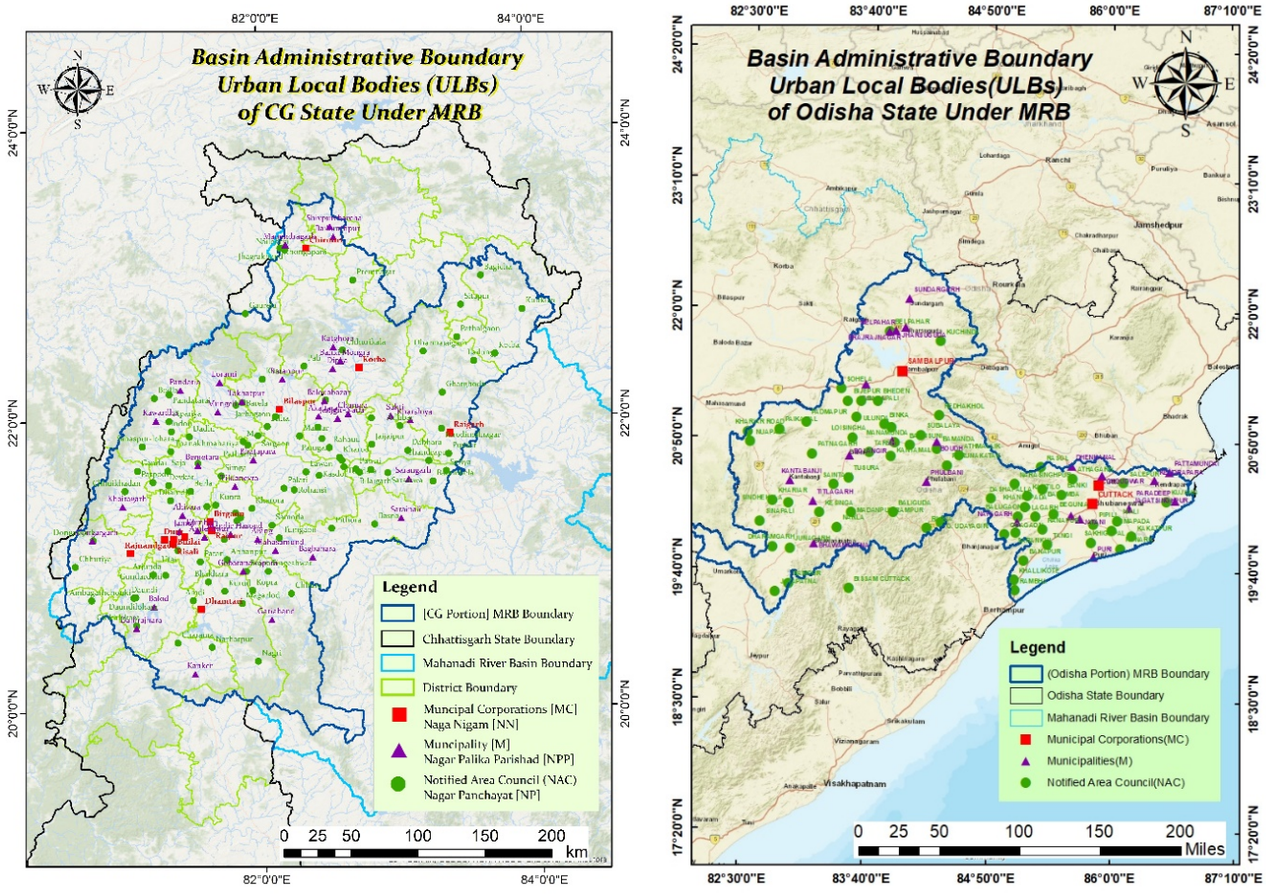
2.2.1.3. Nagar Panchayats/ Town Panchayat under MRB in Chhattisgarh

The Mahanadi River Basin includes 97 Nagar Panchayats, which govern the smallest urban regions. These Nagar Panchayats administer emerging towns and rural areas transitioning to urban status. Notable examples include

Table 4. List of Nagar Panchayats/ Town Panchayat under MRB of Chhattisgarh State
(Source - Dept. of Urban Administration and Development, Govt. of CG)

Nagar Panchayats [Total - 97]					
Abhanpur	Adhbar	Ambagarhchouki	Amdi	Arjunda	Bagicha
Baloda	Baramkela	Barela	Basna	Berla	Bhakhara
Bhatgaon	Bhimbhori	Bilaigarh	Bilha	Bodla	Bodri
Chandkhuri	Chandrapur	Charama	Chhuikhadan	Chhura	Chhurikala
Chhuriya	Chikhlakasa	Dabhara	Dadhi	Daundi	Daundilohara
Devkar	Dhamdha	Dharmajaigarh	Dongargarh	Fingeshwar	Gandai
Gaurela	Gharghoda	Gundardehi	Gurur	Indori	Jaijaipur
Jarhagaon	Jhagrakhand	Kasdol	Kharod	Kharora	Khongapani
Kirodimalnagar	Kopra	Kota	Kotba	Kunkuri	Kunra
Kurud	Lailunga	Lawan	Magarlod	Malhar	Mana Camp
Maro	Nagri	Nailederi	Narharpur	Nariyara	Nawagarh
Naya Baradwar	Palari	Pali	Pamgarh	Pandatarai	Parpodi
Patan	Pathalgaon	Pathariya	Pawni	Pipariya	Pithora
Premnagar	Pusaur	Rahaud	Rajim	Rohansi	Sahaspur-lohara
Saja	Samoda	Saragaon	Sargaon	Sariya	Sarsinwa
Shivrinarayan	Simga	Sitapur	Thanakhmahariya	Tumgaon	Tundara
Utai					

A detailed map highlights the location of these ULBs across both Chhattisgarh and Odisha are shown in Figure 7 (a) and Figure 7 (b), marking the urban centres along the Mahanadi's course.



(a) (b)

Figure 7. ULBs under MRB (a) C.G. (b) Odisha

3. Distribution of Population

3.1 Total Population

The Mahanadi basin in Chhattisgarh is home to a total of 25.55 million inhabitants as per the 2011 Census (Figure 8). Chhattisgarh, predominantly a rural state, has been witnessing a gradual shift in its population distribution. The majority of its residents still call villages home, engaging in agriculture and allied activities, constituting approximately 75%, resided in rural areas, with a total of 16.58 million people. Conversely, the urban population accounted for the remaining 25%, with 5.47 million individuals residing in urban centers within the basin. This demographic transition presents both challenges and opportunities for the state, demanding a balanced approach to development that addresses the needs of both rural and urban populations.

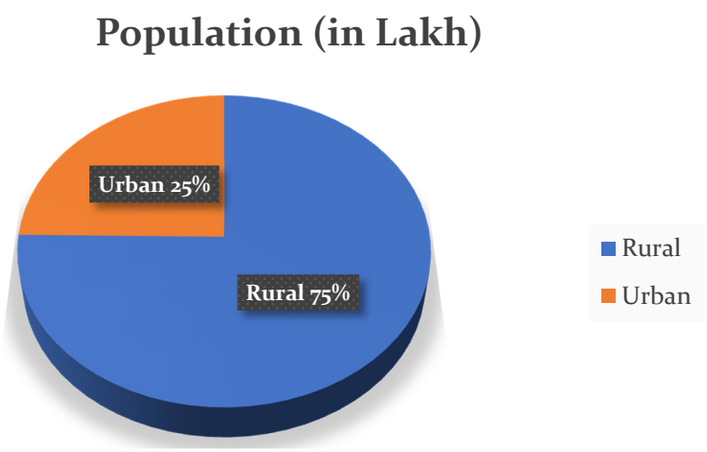


Figure 8. Urban and Rural population of Chhattisgarh State (2011)

The 2011 census revealed a relatively balanced gender ratio in Chhattisgarh. The state recorded 991 females for every 1000 males, a figure higher than the national average. District wise details of male and female population contributing in total population are shown in Figure 9. This indicates a comparatively better status for women in the state. This near-equal distribution of genders is a significant demographic characteristic of the state, influencing various socio-economic factors and development initiatives.

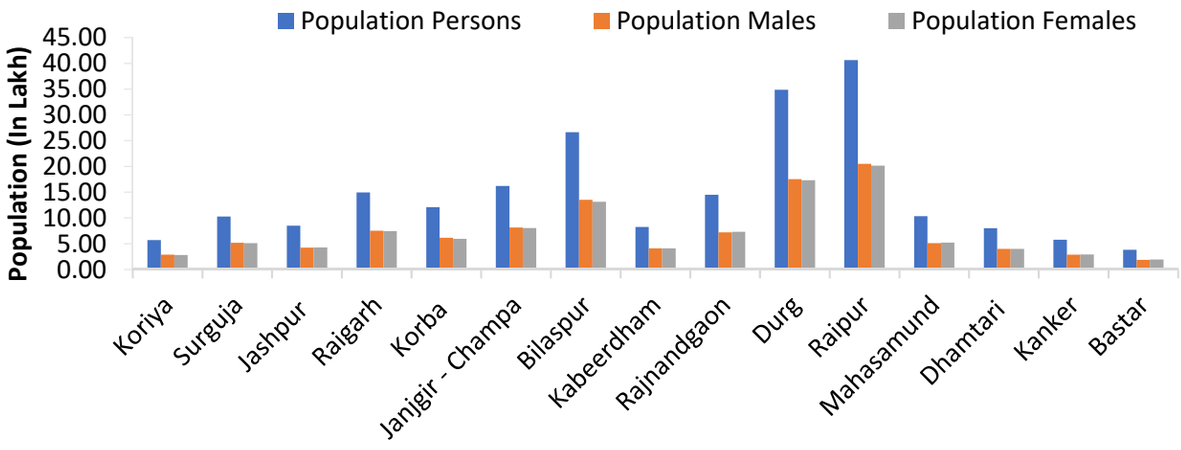


Figure 9. Male and Female population of Chhattisgarh State (2011)

A comprehensive overview of the population distribution across various districts of Odisha is illustrated in figure 10. It details the total population and a gender breakdown into male and female counts for each district. For instance, the district of Cuttack has the highest population among the listed districts, with a total of 2,624,470 people, of which 1,352,760 are males and 1,271,710 are females. In contrast, the district of Boudh has a significantly smaller population of 441,162, with a reasonably balanced gender ratio of 221,625 males and 219,537 females. The data also highlights districts with notable gender imbalances; for example, Khordha has 1,167,137 males compared to 1,084,536 females. Expanding further on the provided population data, the district of Sundargarh stands out with a significant population of

2,093,437, comprising 1,061,147 males and 1,032,290 females. This district and Cuttack represent some of the more densely populated regions. On the other hand, districts like Deogarh and Sonepur have relatively more minor populations, with Deogarh having 312,520 people and Sonepur 610,183 people.

Interestingly, some districts display a near-equal gender ratio, such as Kalahandi, with 787,101 males and 789,768 females, indicating a balanced demographic. Conversely, districts like Khordha and Angul show a larger male population compared to females, which could imply migration patterns, employment opportunities, or cultural factors influencing gender distribution. These population statistics help understand the demographic setup and play a critical role in planning public services, healthcare, education, and infrastructure development. By analyzing such data, policymakers can identify areas needing more focused attention, ensuring equitable distribution of resources and better implementation of developmental programs across the districts.

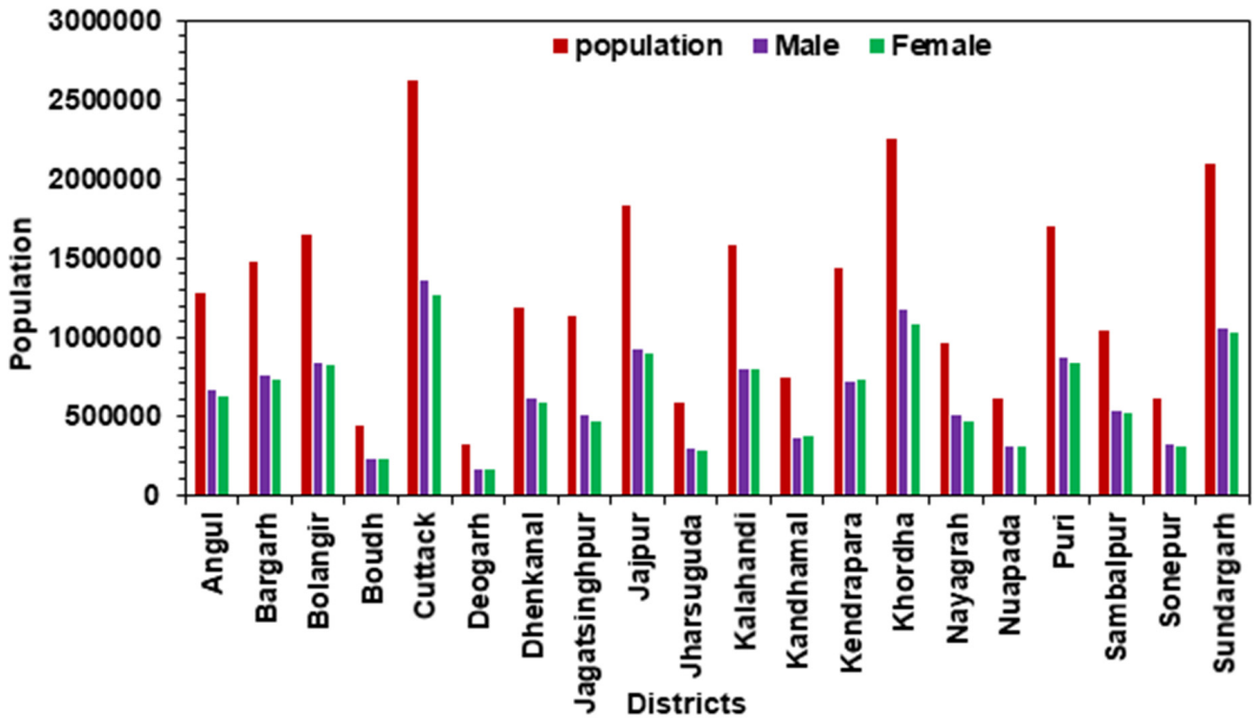


Figure 10. Male and Female population of Odisha State (2011)

3.2 Population Distribution

3.2.1. In Chhattisgarh State of Mahanadi Basin

Chhattisgarh has witnessed a significant population growth over the decades, while the state was formed relatively recently in 2000. The population growth trend of the Chhattisgarh state traced back to when it was part of Madhya Pradesh from 1901 to 2011 is shown in Figure 11. The data reveals a consistent population increase over this period, with significant spikes between certain decades. Notably, the decades following 1951 witnessed the most substantial growth rates, indicating a period of rapid population expansion. While the rate of growth has fluctuated over the years, the overall trend shows a steady upward trajectory in the population.

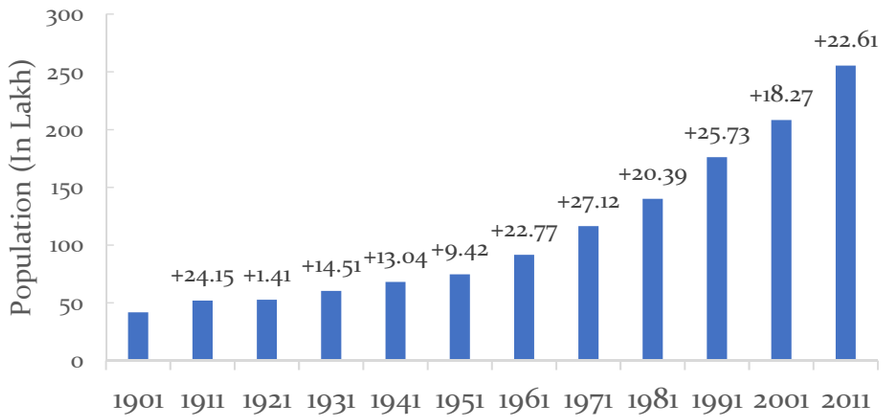
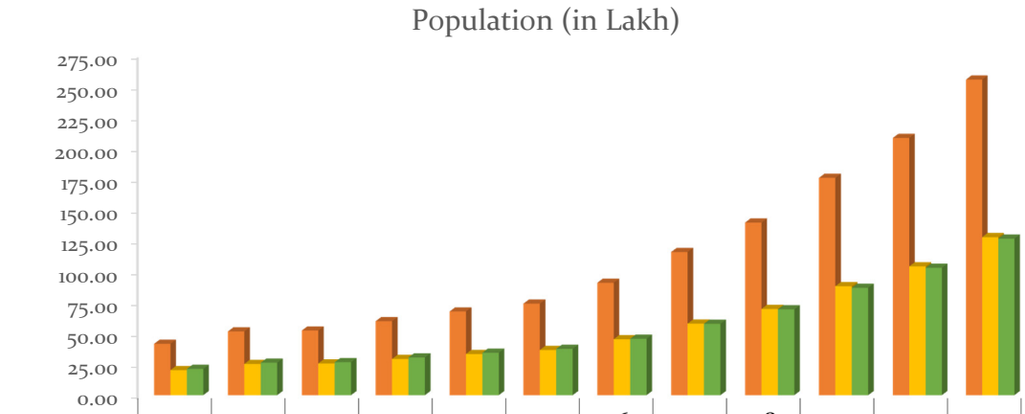


Figure 11. Trend in population and Growth Rate (%) in Chhattisgarh 1901-2011

The decadal population dynamics within a Chhattisgarh state of Mahanadi Basin is shown in Figure 12 from 1901 to 2011 shows surge from 4.18 million in 1901 to 25.55 million in 2011. Notably, show the almost same rate of growth of male and female's population narrowed over time. This trend indicates substantial growth and evolving demographics within the Mahanadi basin. The overall population of Chhattisgarh experienced a significant growth, both males and females contributed almost equally to this increase, suggesting a steady population growth pattern in terms of gender.



	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
Person	41.82	51.92	52.65	60.29	68.15	74.57	91.54	116.3	140.1	176.1	208.3	255.4
Males	20.43	25.46	25.80	29.51	33.54	36.83	45.58	58.25	70.20	88.73	104.7	128.3
Females	21.38	26.46	26.85	30.78	34.61	37.73	45.96	58.12	69.91	87.42	103.6	127.1

Figure 12. Decennial Population of Chhattisgarh state 1901-2011

The percentage share of different districts in the population of the state as shown in Figure 13, Raipur district, with 18.43% of the total population, emerges as the most populous district, followed by Durg (15.82%). While Bilaspur (12.08%) has a relatively balanced rural-urban split, Raipur and Durg exhibit a stronger urban tilt. Increasing Urbanization in these cities are in search of better education, healthcare, and employment opportunities. On the other hand, districts like Koriya and Bastar have significantly lower population shares and predominantly rural demographics.

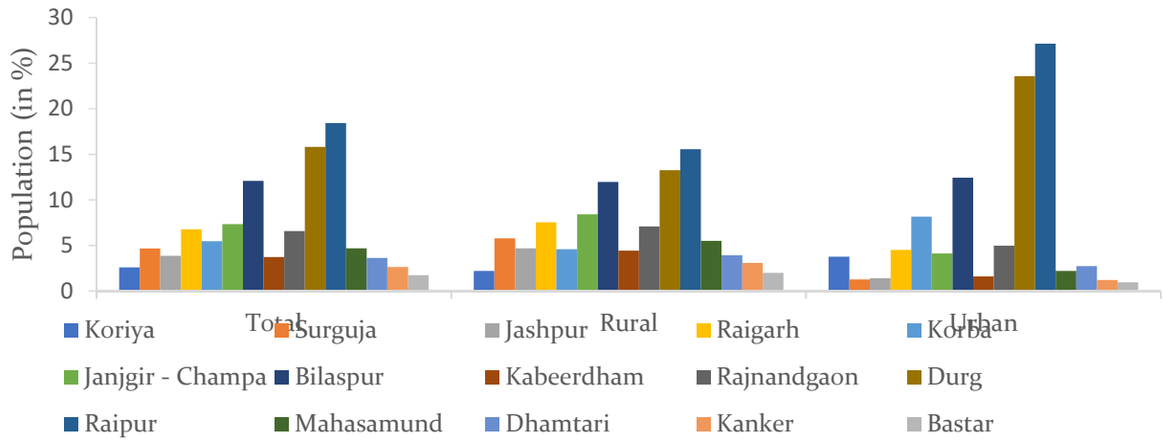


Figure 13. District-wise percentage share in the Chhattisgarh State Population in 2011

Chhattisgarh has a relatively low level of urbanization compared to the national average shown in Figure 14. The total urban population constitutes 22.72% of the state's population. Raipur is the most urbanized district with 14.83% of its population residing in urban areas. Durg follows closely with 12.89% urban population. Bilaspur has a significant urban population at 6.80%. Korba and Janjgir-Champa also have notable urban populations at 4.46% and 2.25% respectively. The remaining districts have lower levels of urbanization, with most falling below 2%.

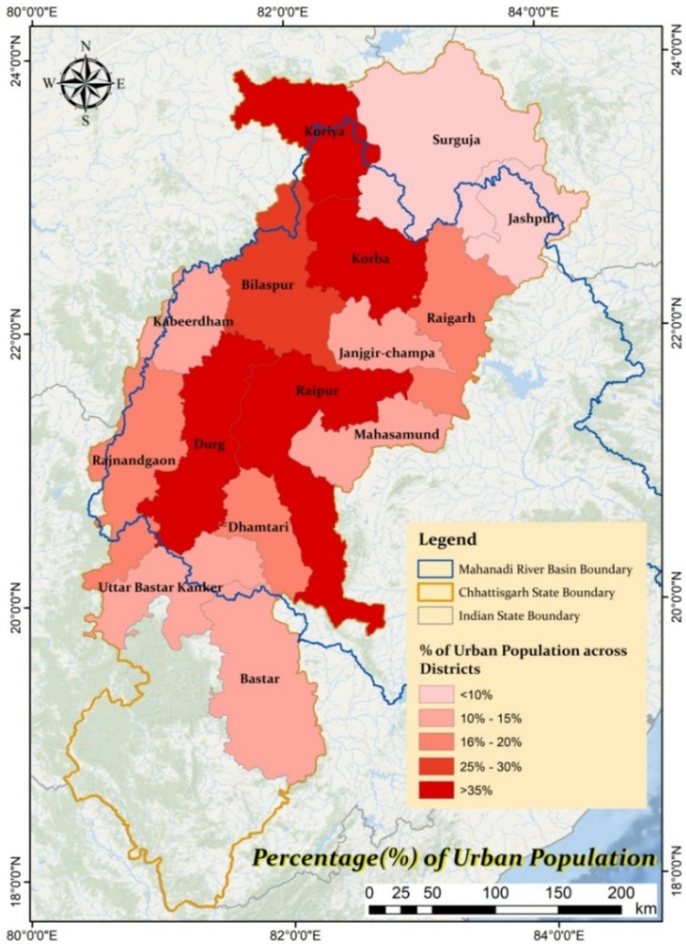


Figure 14. Level of Urbanization in Different District in State of Chhattisgarh (2011)

Urbanization in Chhattisgarh is concentrated in a few major cities and districts, with a significant portion of the population residing in rural areas. Districts with established industries & commercial centres, better connectivity and accessibility like Raipur, Durg, and Korba, tend to have higher urbanization rates. There is a need for further development of urban infrastructure and amenities to accommodate the growing urban population and ensure sustainable development.

3.2.2. In Odisha State of Mahanadi Basin

Figure 15 show that the Mahanadi River basin in Odisha encompasses numerous districts, each experiencing significant population growth over the past century. Districts such as Angul, Bargarh, and Bolangir have seen their populations increase from around 278,000, 371,000, and 330,000 in 1901 to over 1.2 million, 1.4 million, and 1.6 million, respectively, by 2011. Major districts like Cuttack and Khordha grew from 816,086 and 470,409 in 1901 to 2,624,470 and 2,251,673, respectively, highlighting their importance as key regional hubs. Even smaller districts like Boudh and Deogarh saw substantial increases, from 122,615 and 59,882 in 1901 to 441,162 and 312,520 in 2011. These trends reflect significant demographic changes and underscore the need for sustainable resource management and infrastructure development to support the growing populations across these diverse and dynamic districts.

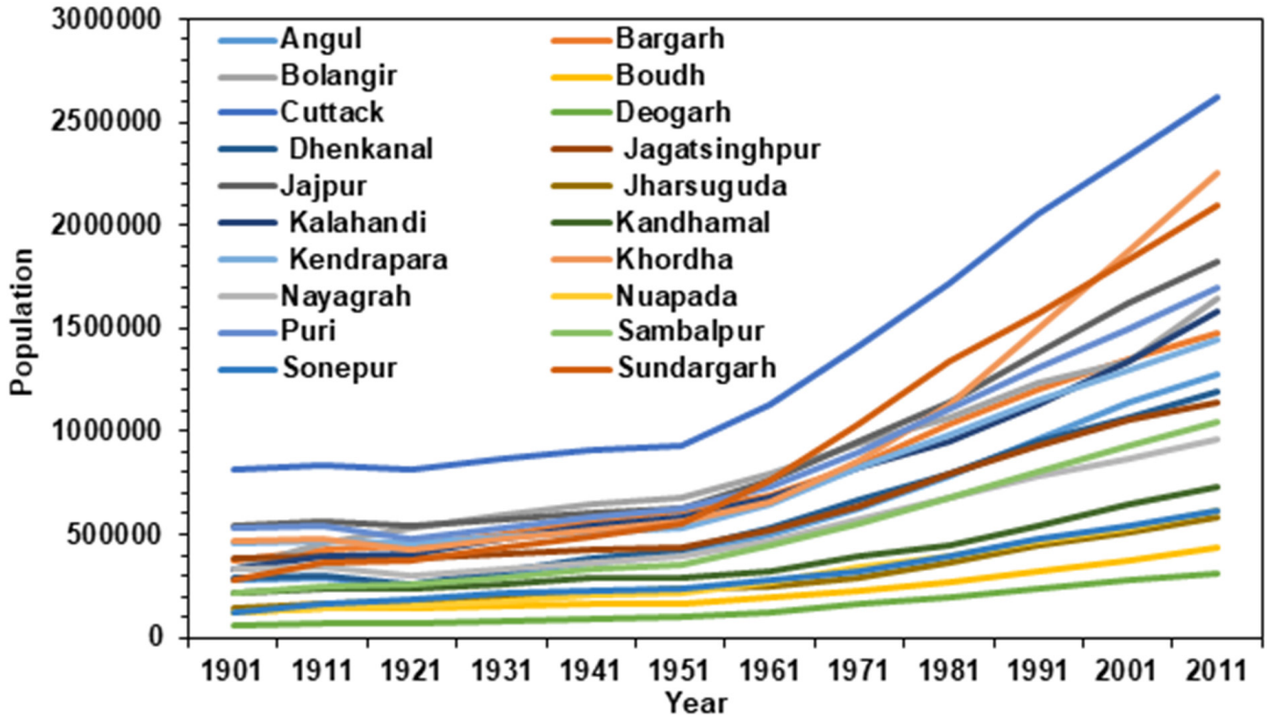


Figure 15. Decadal Variation of Population

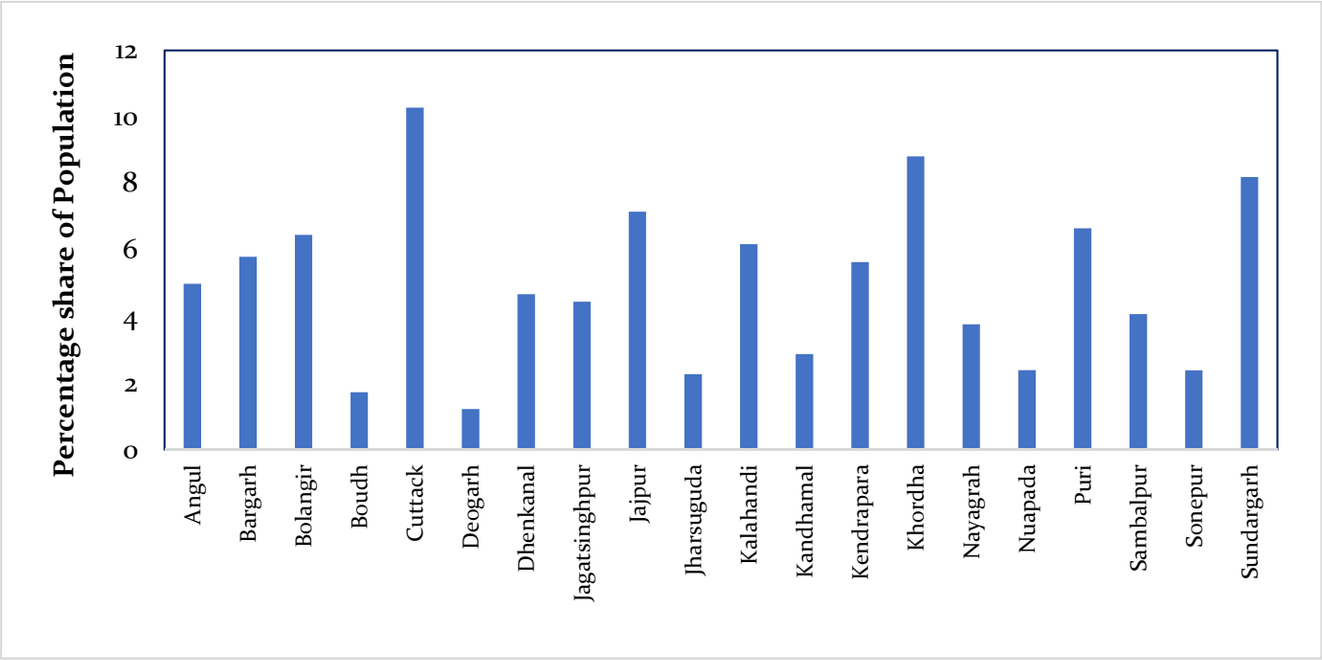


Figure 16. District-wise percentage share in the Odisha State Population in 2011

In 2011, the distribution of population across districts varied significantly, with Cuttack leading with a substantial share of 10.28% of the total population of 25,537,337 (Figure 15). Following closely were Khordha and Sundargarh, contributing 8.82% and 8.20%, respectively. The larger districts like Jajpur and Kalahandi also held significant portions, with 7.15% and 6.17% of the population. In contrast, districts such as Boudh and Deogarh had much smaller shares, at 1.73% and 1.22%.

3.3 Population Growth Trends

The decadal population growth rates for Chhattisgarh's districts from 1971 to 2011 are presented in Figure 17 & 18. There's significant variation across districts and time periods. Korba witnessed the highest growth in 1971-1981 (42.47%) as electricity hub of the state, which now settle to moderate (19.25%) in 2001-2011, while Janjgir-Champa had the lowest growth rate (11.99%) in the same decade. Kabirdham shows a rapid increase in population which was 13.84 % in 1991-2001 to 40.71 in 2001-2011 due to Economic Activity and agriculture growth. Districts like Bilaspur and Raipur consistently showed high growth rates, particularly in recent decades, suggesting rapid urbanization and development.

In contrast, some tribal-dominated districts like Kanker and Bastar experienced more moderate growth. Overall, the state has seen substantial population increases, with certain regions developing faster than others. This suggests varying factors influencing population dynamics in different regions, such as industrialization, urbanization, agricultural productivity, and migration patterns. These figures highlight the uneven population dynamics within Chhattisgarh and warrant further analysis to understand underlying factors.

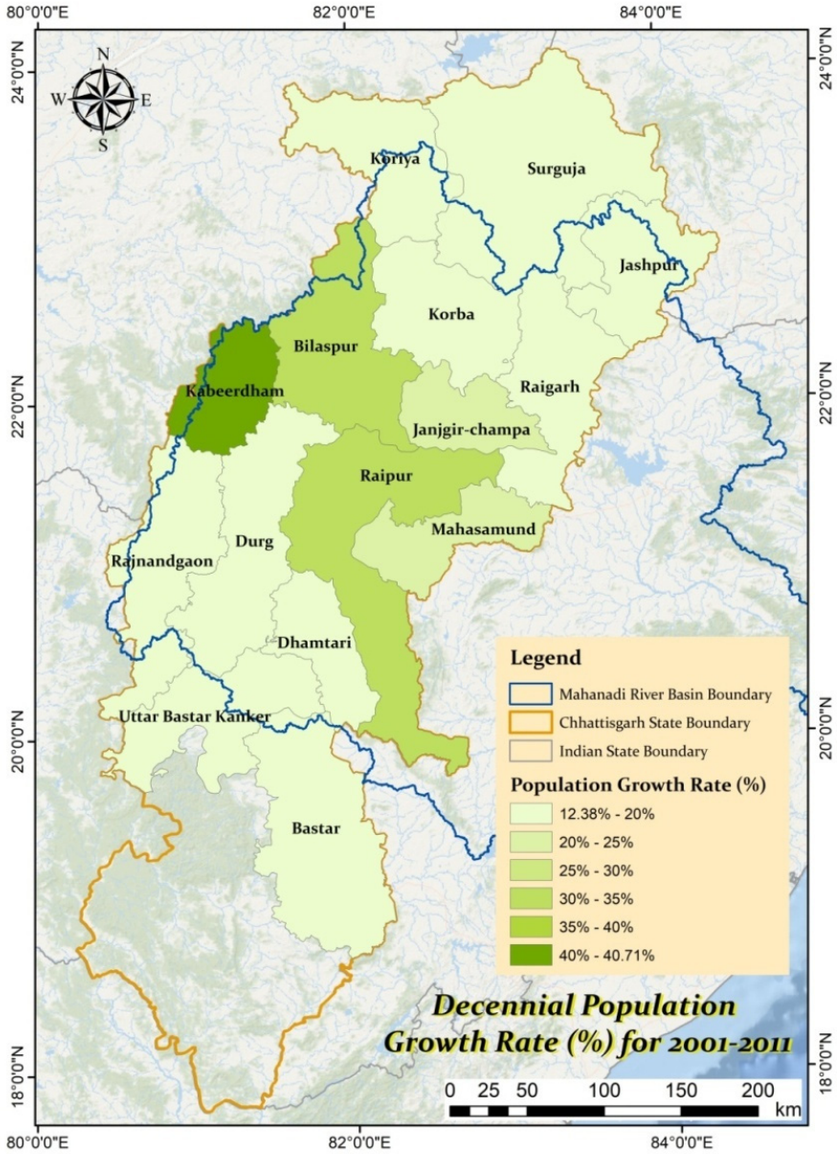


Figure 17. District-wise Decennial Population growth rate of Chhattisgarh (2001-2011)

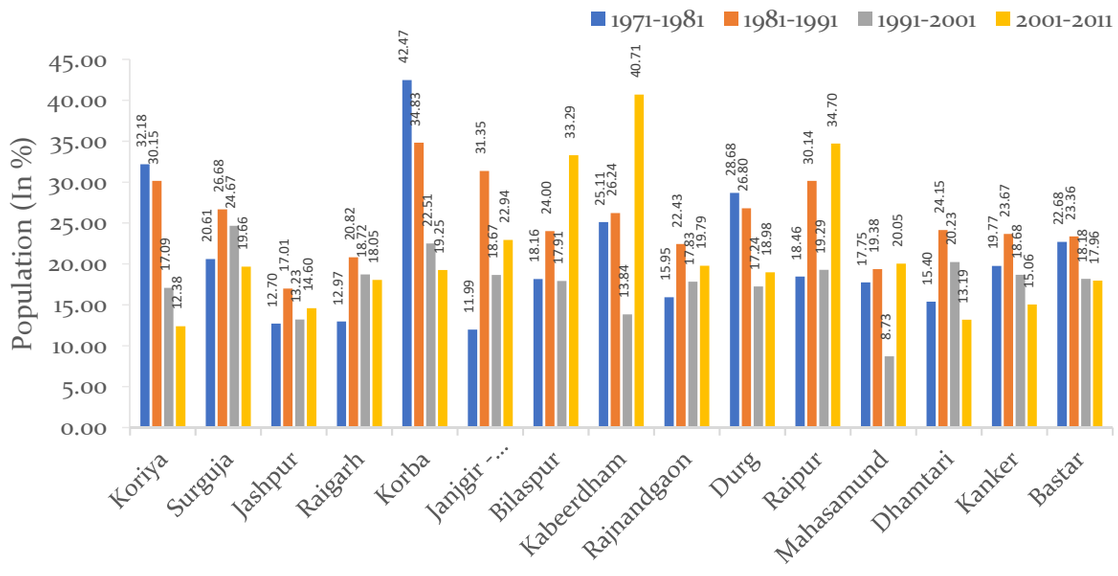


Figure 18. District-wise Decennial Population growth rate of Chhattisgarh (1971-2011)

3.4 Population Density

Chhattisgarh is a relatively sparsely populated state in India. Despite being the ninth largest state in terms of area, it ranks 17th in terms of population. The population density of districts in Chhattisgarh state varies significantly (Figure 19). Janjgir-Champa, Raipur and Durg are district has the higher population density, indicating a higher concentration of people per square kilometer. On the other hand, Jashpur and Bastar district has the lowest population density at 110.06 and 116.40 respectively.

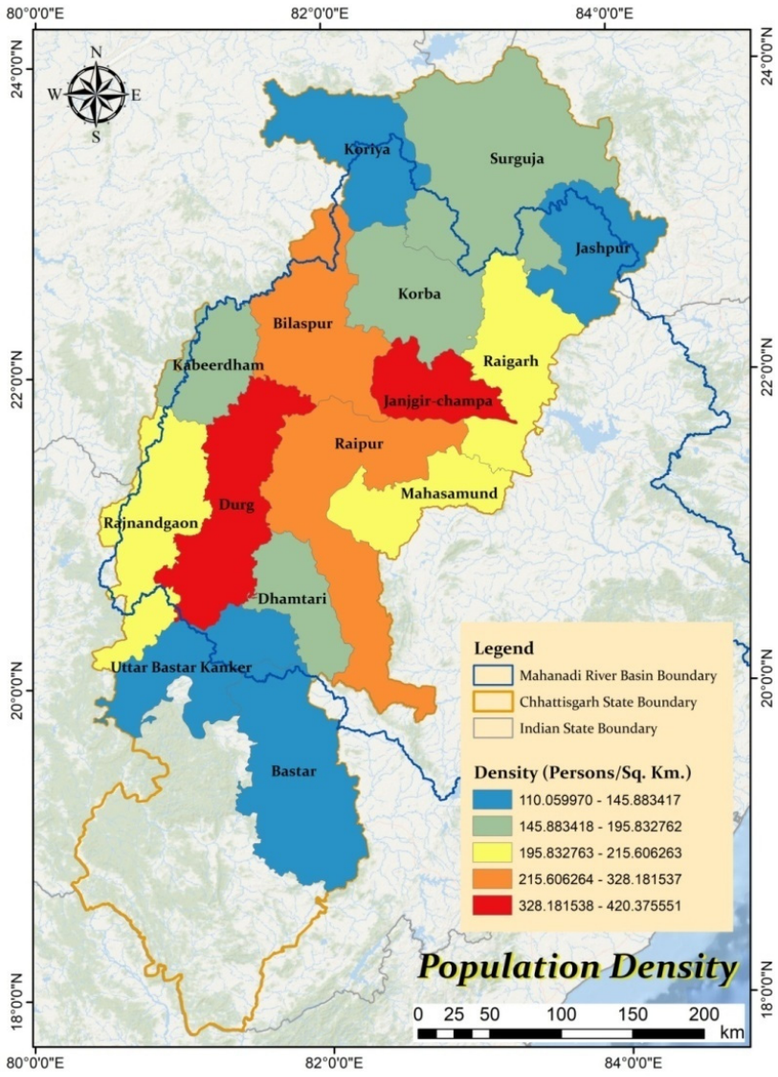


Figure 19. Population Density of Different District in State of Chhattisgarh (2011)

The state has a substantial tribal population residing in remote areas, contributing to a lower overall population density. A significant portion of Chhattisgarh is covered by forests, limiting habitable areas and hilly undulating terrain in some parts of the state restricts population concentration.

Figure 20 represents portion of total population of Mahanadi Basin in the Indian state of Odisha. It can be clearly observed that eastern part of the state i.e. Jajpur, Cuttack, Jagatsignpur and Khordha have higher population density of 561-793 persons per square kilometres.

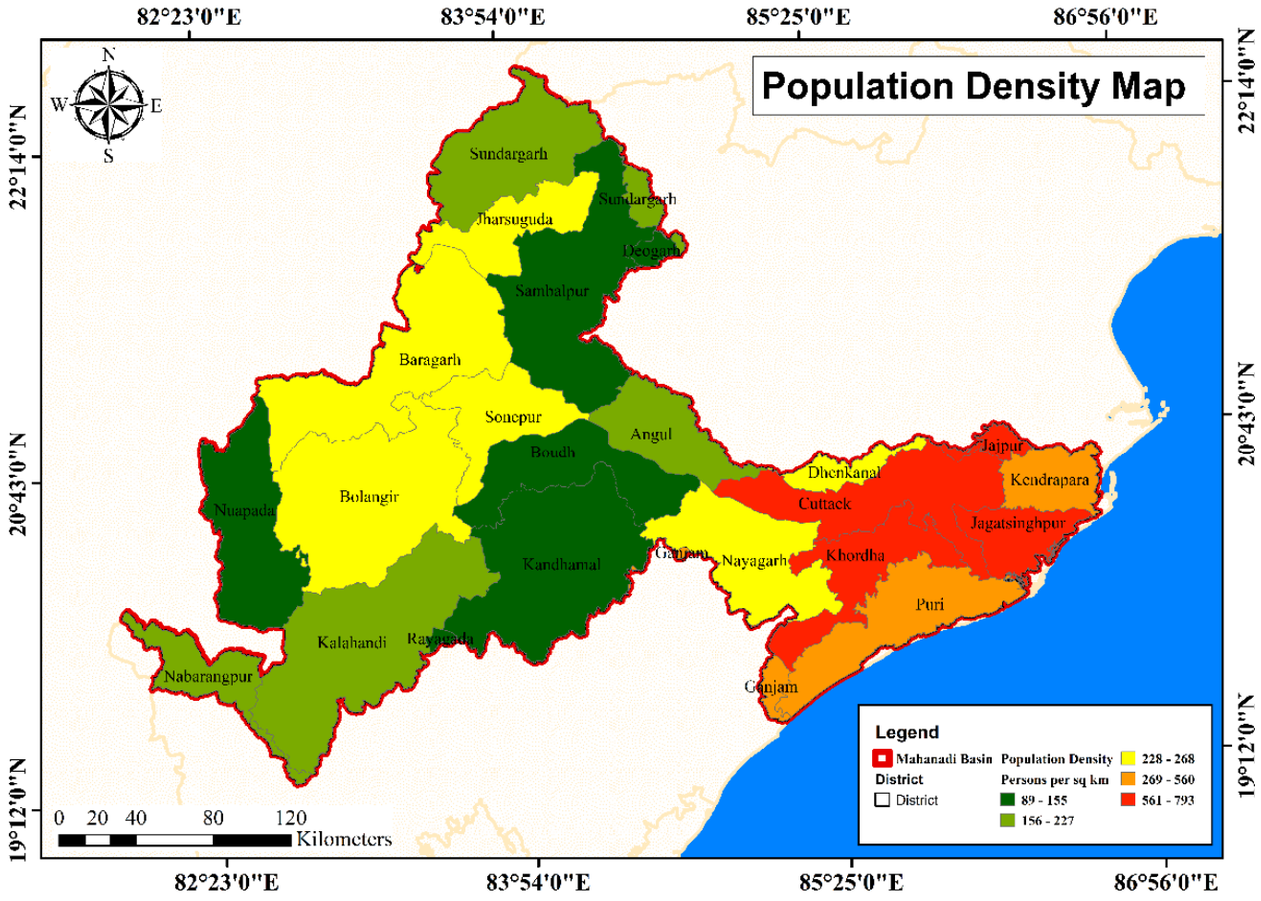
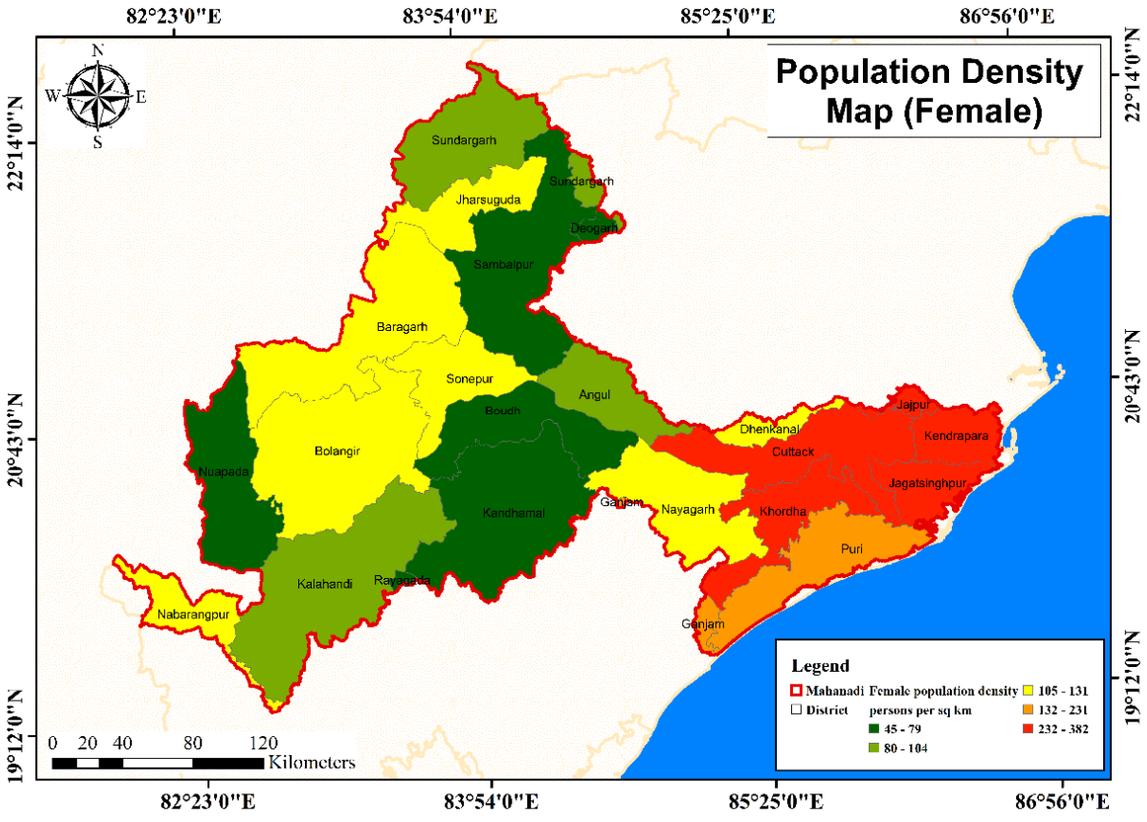


Figure 20. Population Density of Different District in State of Odisha (2011)

High population densities suggest urbanized regions that require extensive infrastructure, public services, and rigorous urban planning to properly manage traffic and resource allocation. Whereas the western part of the state i.e. Kandhamal, Boudh, Nuapada, Sambalpur and Deogarh have low population density of 89 to 155 persons per square kilometres.

Low population densities are characteristic of rural locations, where the emphasis may be on agriculture and infrastructure requirements vary greatly. For example, a highly populated region like Cuttack, with a large population and potentially limited space, would require considerable governmental services and infrastructure to sustain its residents.

Figure 21 represents population density map for both female and male. Higher male population density than female density implies an unequal gender distribution within an area. This inequality can have a considerable impact on regional growth and planning. For example, districts with a greater male population density, such as Khordha and Angul, may have different public service needs and social dynamics than those with a more balanced or higher female population density.



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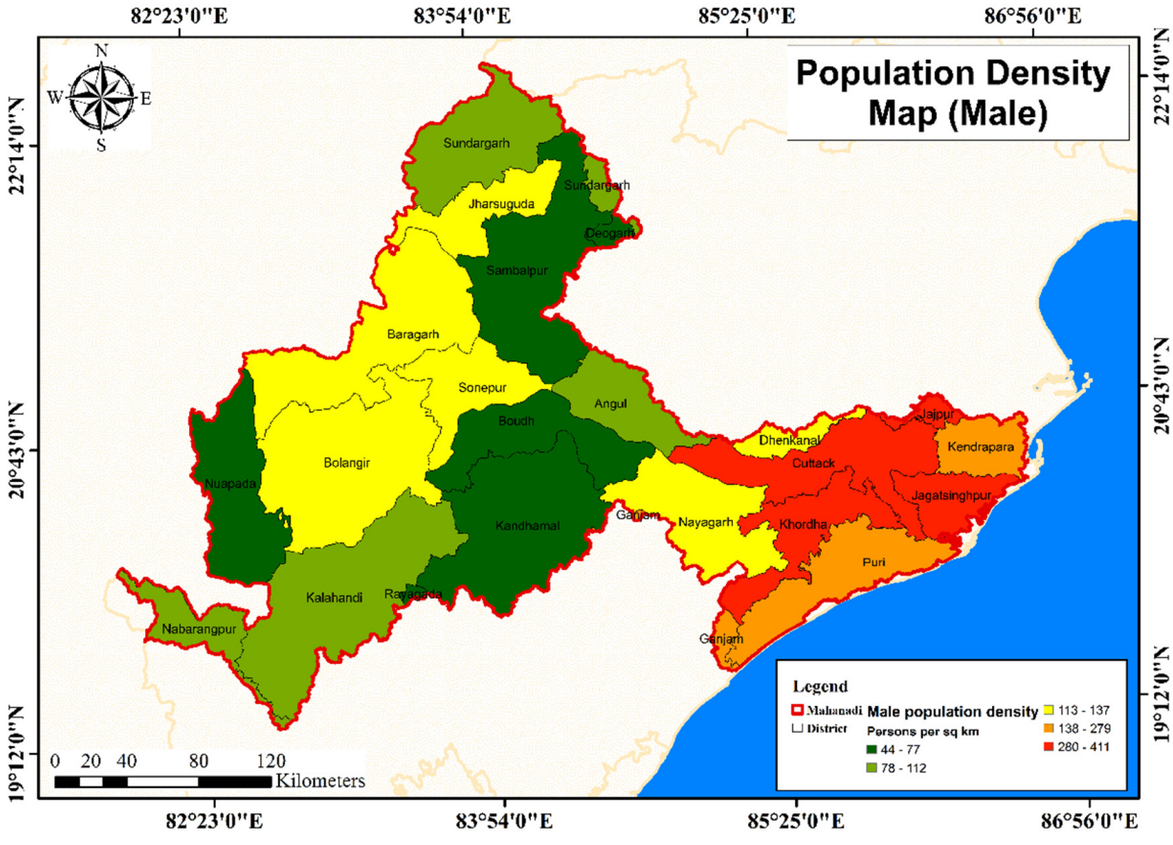


(b)

Figure 21. Population Density Map for (a) Female & (b) Male across the districts of Odisha

4. Demographic Characteristics

4.1 Age Distribution

The provided data in Figure 22 depicts the population pyramid of Chhattisgarh, categorized by age groups and divided into male and female percentages. The pyramid illustrates a relatively young population, with a higher proportion of individuals in the younger age brackets. This is particularly evident in the 0-19 age group, where both males and females constitute a significant percentage of the total population. As the age group progresses, there is a gradual decline in population percentage for both genders, indicating a tapering off in the older age brackets. The data suggests a potential for a growing workforce in the future, but also highlights the need for policies addressing the aging population and its associated challenges.

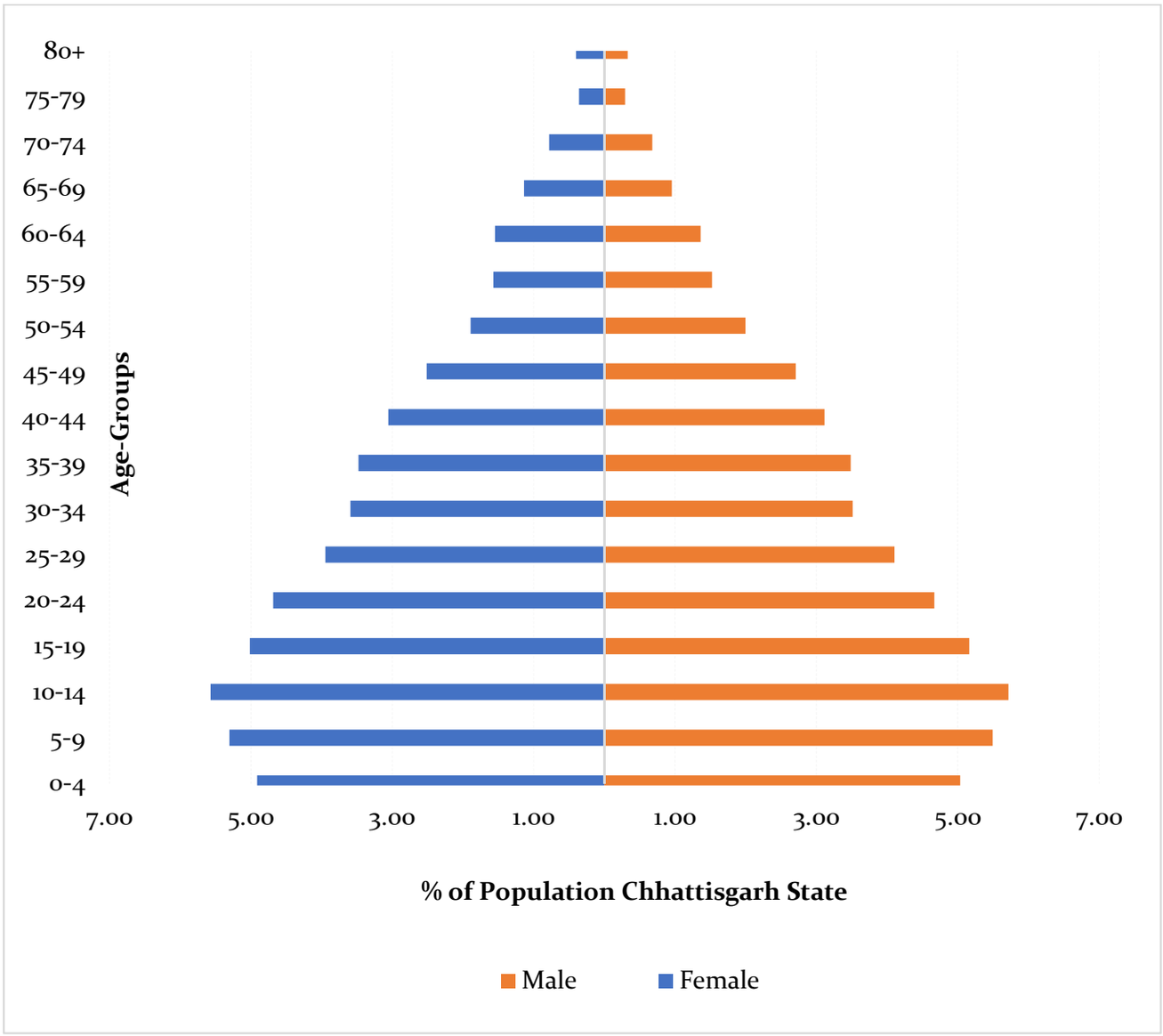


Figure 22. Age-Gender Population Pyramids, Chhattisgarh 2011.

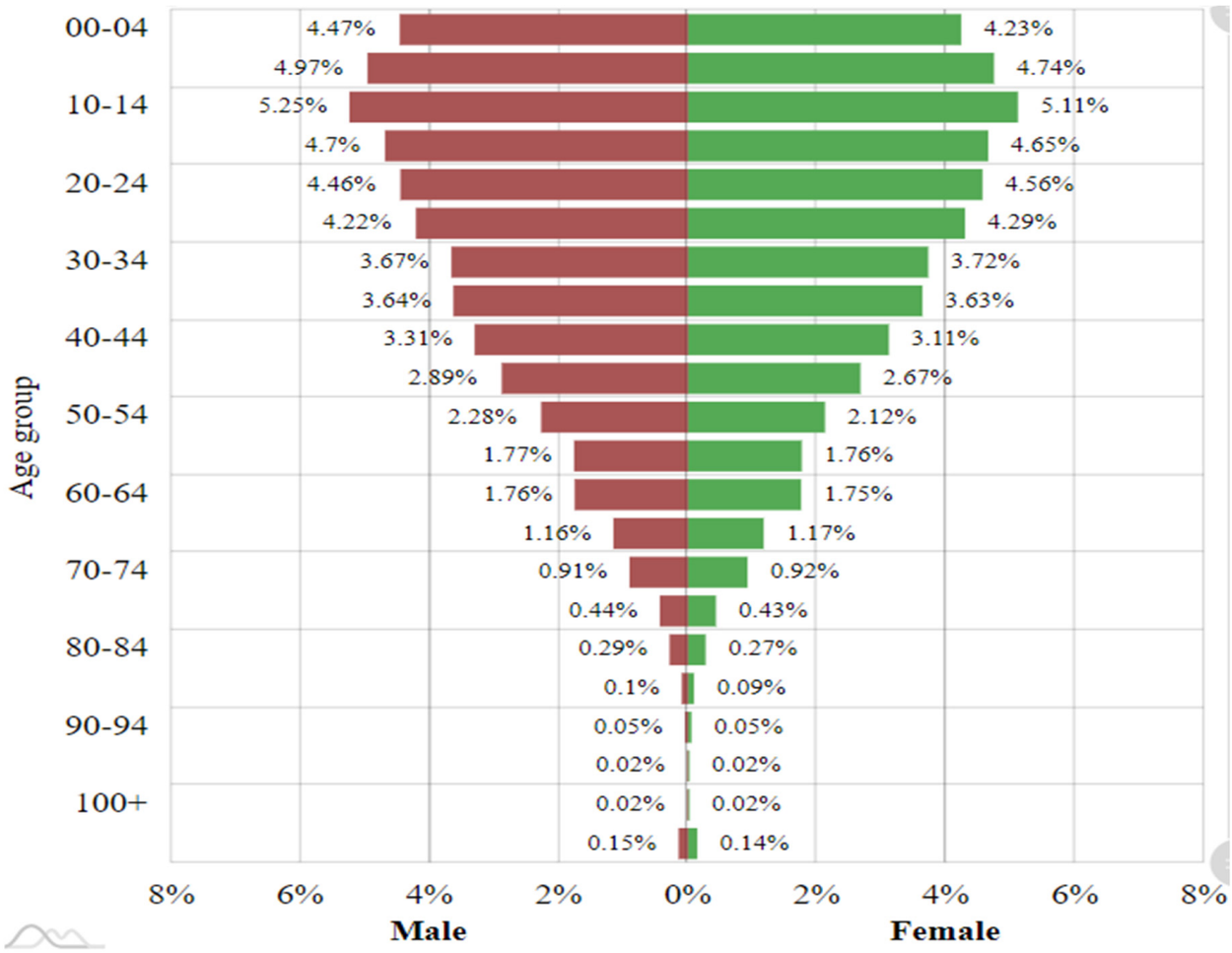


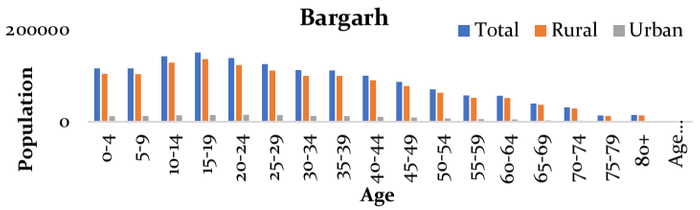
Figure 23. Projection of population (Total, Rural & Urban) from 2011 to 2036

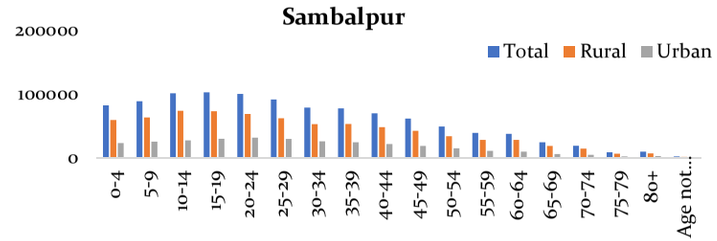
The provided population pyramid in Figure 23 for Odisha in 2011 displays the age and sex distribution of the population. Here is a detailed analysis based on the graph:

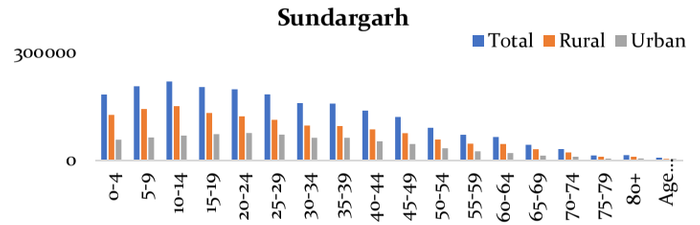
1. **Young Age Groups (0-14 years):**
    - The base of the pyramid is relatively broad, with children aged 0-4 years comprising 4.47% males and 4.23% females of the total population.
    - The 5-9 years age group includes 4.97% males and 4.74% females.
    - The 10-14 years' age group shows 5.25% males and 5.11% females.
    - These figures indicate a young population with slightly more males than females in these age groups.
2. **Working-Age Groups (15-59 years):**
    - The working-age population forms a significant portion of the pyramid.
    - In the 15-19 years' age group, 4.7% are males and 4.65% are females.
    - For the 20-24 years' age group, males account for 4.46%, while females make up 4.56%.

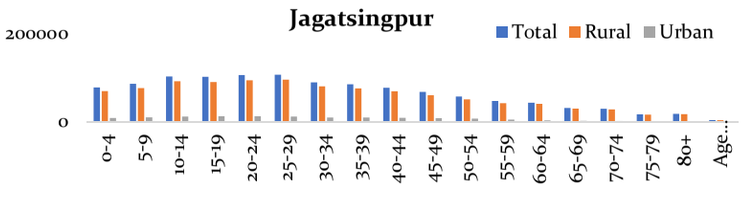
- The 25-29 years' age group includes 4.22% males and 4.29% females.
- In the 30-34 years' age group, 3.67% are males and 3.72% are females.
- The 35-39 years' age group has 3.64% males and 3.63% females.
- For the 40-44 years' age group, 3.31% are males and 3.11% are females.
- The 45-49 years' age group shows 2.89% males and 2.67% females.
- The 50-54 years' age group has 2.28% males and 2.12% females.
- The data suggests a near parity between the sexes in the working-age population, with a slightly higher percentage of males in the younger working-age groups and a near-equal distribution in the older working-age groups.

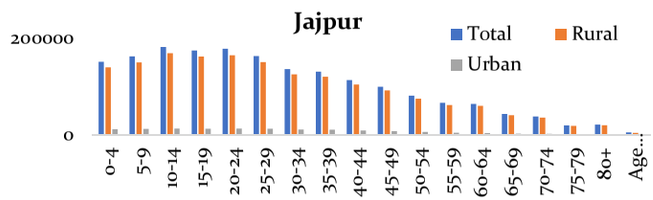
3. **Older Age Groups (60 years and above):**
   - In the 60-64 years' age group, males constitute 1.77% and females 1.76%.
   - The 65-69 years' age group includes 1.76% males and 1.75% females.
   - For the 70-74 years' age group, 1.16% are males and 1.17% are females.
   - The 75-79 years' age group shows 0.91% males and 0.92% females.
   - The 80-84 years' age group has 0.44% males and 0.43% females.
   - For the 85-89 years' age group, 0.29% are males and 0.27% are females.
   - The 90-94 years' age group includes 0.1% males and 0.09% females.
   - The 95-99 years' age group has 0.05% males and 0.05% females.
   - The centenarian group (100+ years) includes 0.02% males and 0.02% females.
   - The pyramid shows a higher proportion of females in the older age groups, reflecting higher life expectancy among women.

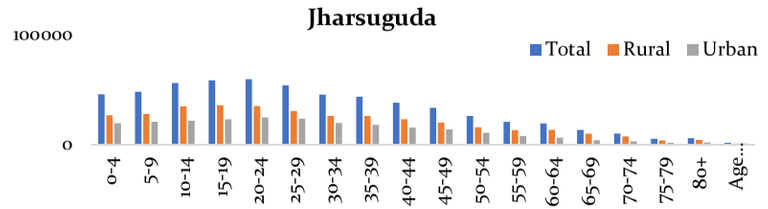


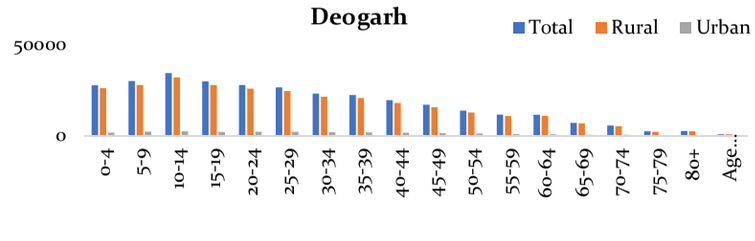


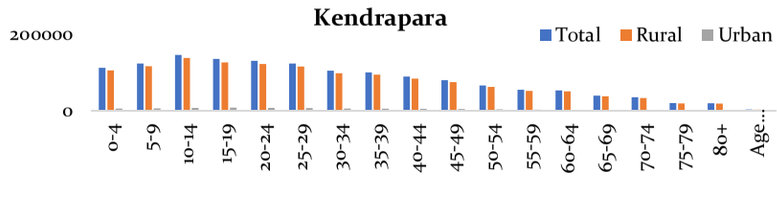


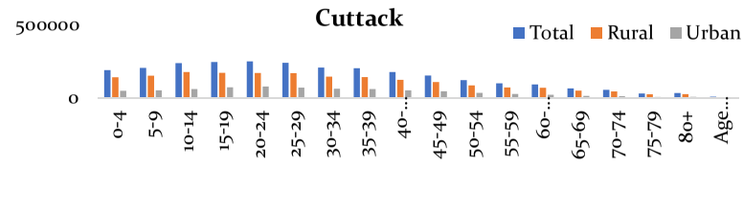


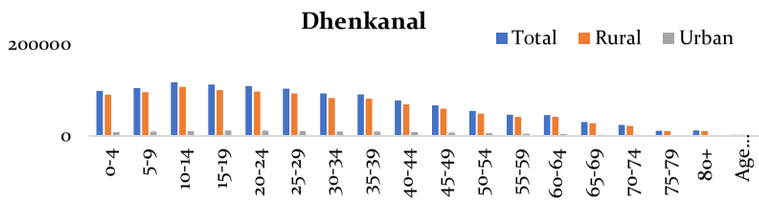




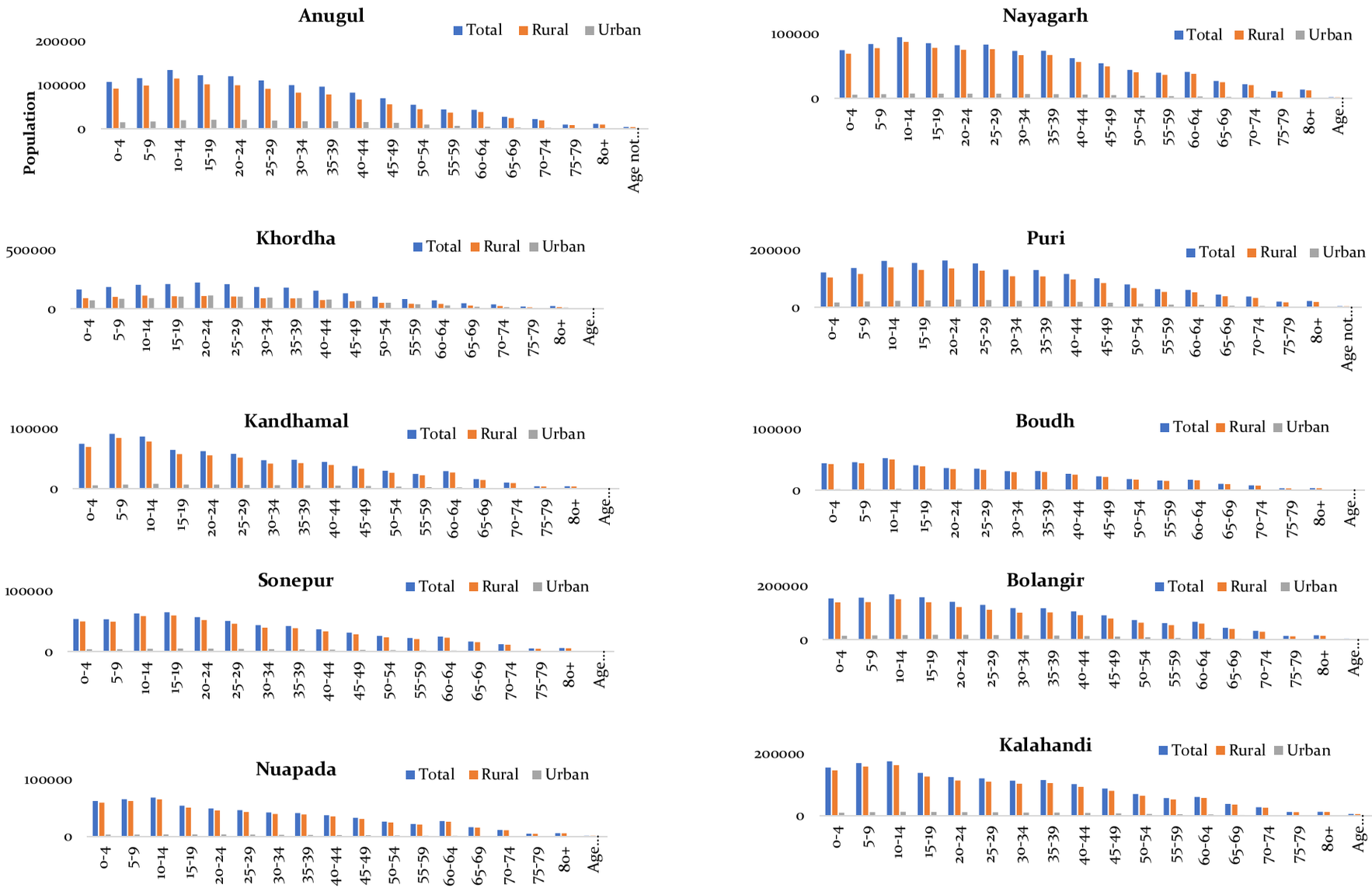








(a)



(b)

Figure 24. Projection of population (Total, Rural & Urban) from 2011 to 2036

4.2 Sex Distribution

In the State of Chhattisgarh, the population in each district shows a significant gender balance, with slight variations observed between rural and urban areas (Table 5). Both in rural and urban settings, districts like Koriya, Surguja, and Jashpur exhibit a fairly evenly split population between males and females. However, districts such as Raigarh and Korba exhibit a more pronounced rural-urban divide, with urban populations often having a higher proportion of females. Janjgir-Champa and Bilaspur show similar patterns with significant urban populations, where female counts often exceed males in urban areas. In contrast, districts like Bastar and Kanker demonstrate more balanced gender ratios, indicating a more even distribution between males and females across both rural and urban demographics. Overall, the data reflects the complex interplay of rural-urban dynamics and gender distribution across various districts of Chhattisgarh.

Table 5. Population (in Lakhs) by sex (Gender distribution)

S.No.	Districts	Total			Rural			Urban		
		Person	Male	Female	Person	Male	Female	Person	Male	Female
1	Koriya	6.59	3.35	3.24	4.54	2.28	2.25	2.05	1.06	0.99
2	Surguja	8.40	4.24	4.16	7.04	3.54	3.50	1.37	0.71	0.66
3	Jashpur	8.52	4.25	4.27	7.76	3.86	3.89	0.76	0.38	0.38
4	Raigarh	14.94	7.50	7.44	12.48	6.24	6.24	2.46	1.26	1.20
5	Korba	12.07	6.13	5.94	7.60	3.81	3.79	4.46	2.31	2.15
6	Janjgir-Champa	16.20	8.16	8.04	13.95	7.01	6.93	2.25	1.14	1.11
7	Bilaspur	19.62	9.96	9.66	13.47	6.80	6.67	6.14	3.16	2.99
8	Kabirdham	8.23	4.12	4.10	7.35	3.68	3.67	0.87	0.44	0.43
9	Rajnandgaon	15.37	7.63	7.74	12.65	6.26	6.38	2.73	1.37	1.36
10	Durg	17.22	8.76	8.46	6.17	3.10	3.08	11.05	5.66	5.39
11	Raipur	21.61	11.01	10.60	8.84	4.45	4.39	12.77	6.56	6.21
12	Mahasamund	10.33	5.12	5.21	9.13	4.52	4.61	1.20	0.60	0.60
13	Dhamtari	8.00	3.98	4.02	6.51	3.23	3.27	1.49	0.74	0.75
14	Kanker	7.49	3.73	3.76	6.72	3.35	3.37	0.77	0.38	0.39
15	Bastar	8.34	4.14	4.21	6.99	3.45	3.54	1.36	0.69	0.67

The sex ratio in Chhattisgarh saw a progressive decrease from 1901 to 2011, followed by a period of stability as shown in Figure 25. The female-to-male ratio, which began at 1046 girls per 1000 males in 1901, had a consistent decline over the years, reaching 985 by 1991. Several socio-economic variables and policies are responsible for this decline. During the period from 2001 to 2011, the ratio remained relatively constant at roughly 989-991, suggesting that attempts to achieve gender balance had reached a stable point. The observed pattern indicates that advancements in healthcare, education, and socioeconomic circumstances

have influenced gender equality throughout the state over the century. However, there are still ongoing difficulties in achieving consistent gender ratios across all districts.

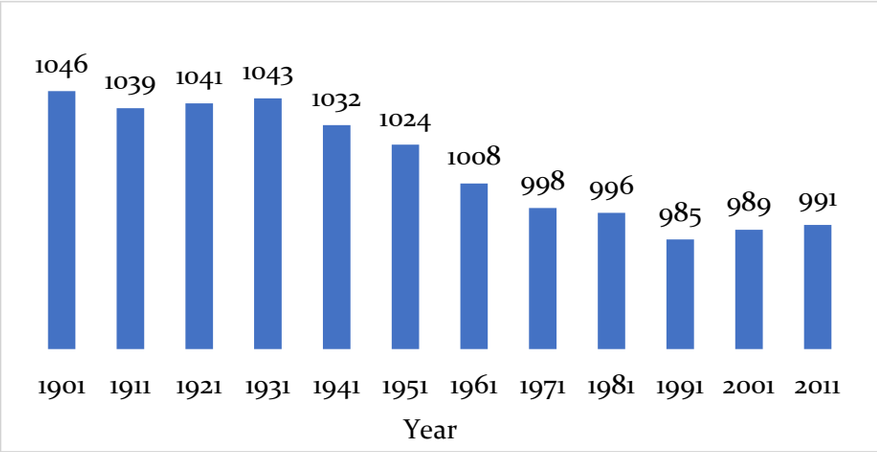


Figure 25. Sex Ratio between 1901-2011 (Census) Chhattisgarh

The sex ratio data for different districts in Chhattisgarh is shown in Figure 25 and detail from 1901 to 2011 which shows remarkable patterns is tabulate in Table 6. In general, sex ratios, representing the number of females per 1000 males, exhibit fluctuations throughout time but have tended to approach more equitable values in recent years.

Table 6. District wise Sex Ratio, 1901-2011 (Census)

Districts	Sex-Ratio (Female on per 1000 Male)											
	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
Koriya	970	966	959	964	950	952	880	926	927	926	946	968
Surguja	970	966	959	964	950	955	978	976	974	966	972	978
Jashpur	1013	1014	1017	1020	1011	966	997	1004	1003	1001	999	1005
Raigarh	1013	1014	1017	1020	1011	1045	1019	1010	1007	1000	994	991
Korba	1056	1051	1046	1046	1035	1017	998	985	952	952	964	969
Janjgir-Champa	1056	1051	1046	1046	1035	1034	1041	1029	1028	1007	998	986
Bilaspur	1056	1051	1046	1046	1035	1040	1021	995	989	973	971	971
Kabirdham	1119	1085	1112	1100	1065	1045	1031	1007	1007	996	1002	996
Rajnandgaon	1138	1096	1138	1121	1077	1048	1033	1017	1023	1016	1023	1015
Durg	1066	1065	1064	1063	1064	1064	966	978	980	967	982	988
Raipur	1061	1055	1057	1068	1057	1040	1030	999	1001	983	980	984
Mahasamund	1061	1055	1057	1068	1057	1046	1047	1031	1025	1015	1018	1017
Dhamtari	1061	1055	1057	1068	1057	1054	1053	1022	1023	1009	1004	1010
Bastar	978	994	989	1000	1006	1017	1007	999	1007	1000	1005	1006
Kanker	978	994	989	1000	1006	1086	1016	994	1016	1017	1026	1020

In early records, districts such as Koriya, Surguja, and Jashpur consistently had sex ratios equal to or higher than 1000 females per 1000 males, suggesting a modest preference for females. However, around the middle of the 20th century, these ratios started to decline, becoming more in line with the norm for the state.

Industrialization and population change impact Raigarh, Korba, and Janjgir-Champa, displaying variable patterns. The urbanization process has influenced the gender ratios in districts such as Bilaspur and Raipur. In recent decades, the ratios have reached a stable level of approximately 970–980 girls per 1000 males (Table 6). Kabirdham and Rajnandgaon have persistently exhibited greater sex ratios throughout history, with values exceeding 1000 in previous decades. These ratios have steadily declined, but they have remained higher than the state's average ratios. Mahasamund, Dhamtari, Bastar, and Kanker have consistent gender ratios across time, indicating stable rural populations.

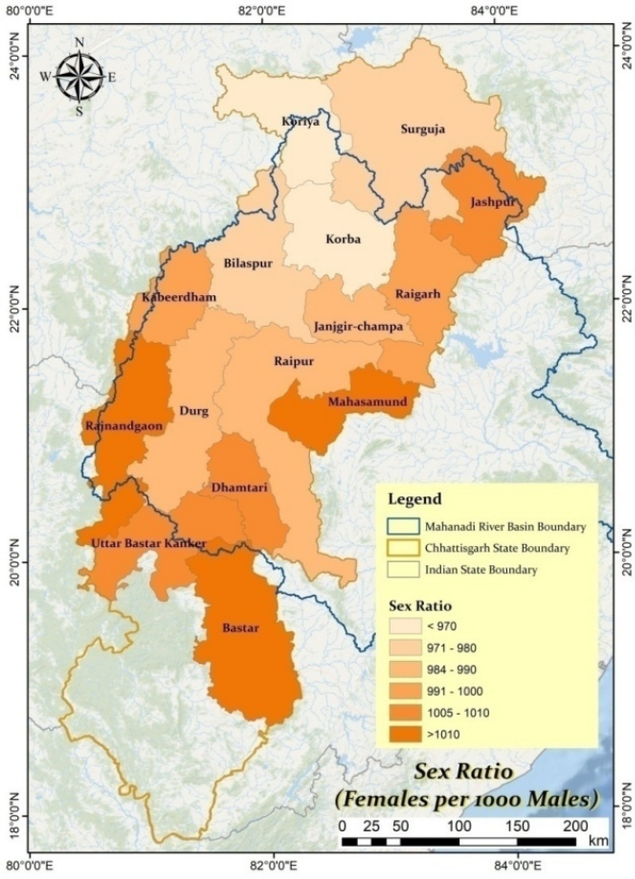


Figure 26. Sex Ratio across the districts of Chhattisgarh (Census 2011)

As per details from Census 2011, Orissa has population of 4.2 Crores, an increase from figure of 3.68 Crore in 2001 census. Total population of Orissa as per latest census data is 41,974,218 of which male and female are 21,212,136 and 20,762,082 respectively (Figure 26). In 2001, total population was 36,804,660 in which males were 18,660,570 while females were 18,144,090. The total population growth in this decade was 14.05 percent while in previous decade it was 15.94 percent. The population of Orissa forms 3.47 percent of India in 2011. In 2001, the figure was 3.58 percent.

The graph (Figure 27) depicting the sex ratio at birth in Odisha from 2009 to 2020 reveals significant trends. Initially, in 2009, there were 941 females per 1,000 males. From 2009 to 2013, the ratio showed a positive trend, peaking at 956 females per 1,000 males in 2013. However, this upward trend did not sustain, as the ratio began to decline gradually from 2013, dropping to 948 in 2015 and continuing to 938 by 2017. The period from 2017 to 2020 witnessed a sharper decline, with the ratio falling to 933 in 2018, 931 in 2019, and reaching a low of 926 in 2020. This overall trend indicates an initial improvement in the sex ratio at birth, but a subsequent significant decline, raising concerns about the gender balance at birth in recent years.

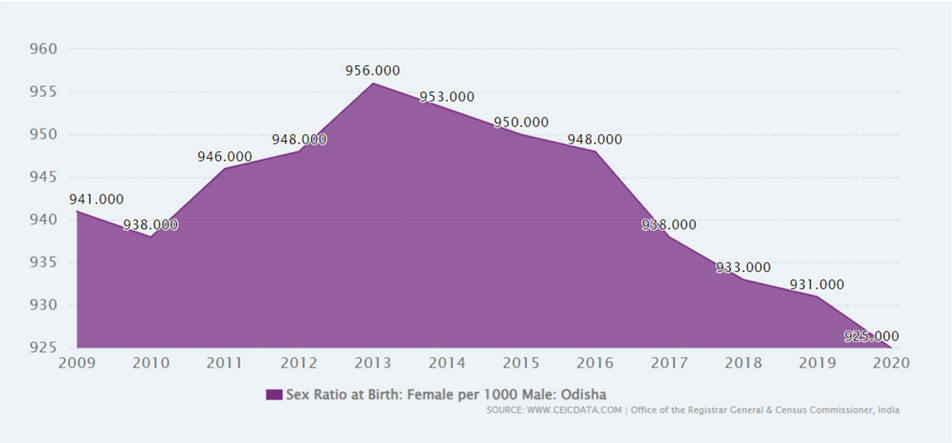


Figure 27. Sex Ratio of Odisha from 2009 to 2020

The gender distribution and trends in the sex ratio of Odisha, as per the latest population census, highlight significant demographic patterns. As of the 2011 Census, Odisha recorded a sex ratio of 979 females per 1,000 males, reflecting a gradual improvement from the previous census in 2001, which had a sex ratio of 972. This positive trend indicates a slow yet steady move towards gender balance in the state. The child sex ratio (0-6 years) of Odisha, however, is a matter of concern. In 2011, it stood at 941, a decline from 953 in 2001, suggesting a need for targeted interventions to address gender biases and ensure the well-being of female children. Overall, while the general sex ratio shows progress, the declining child sex ratio underscores ongoing challenges in achieving gender equity across all age groups in Odisha.

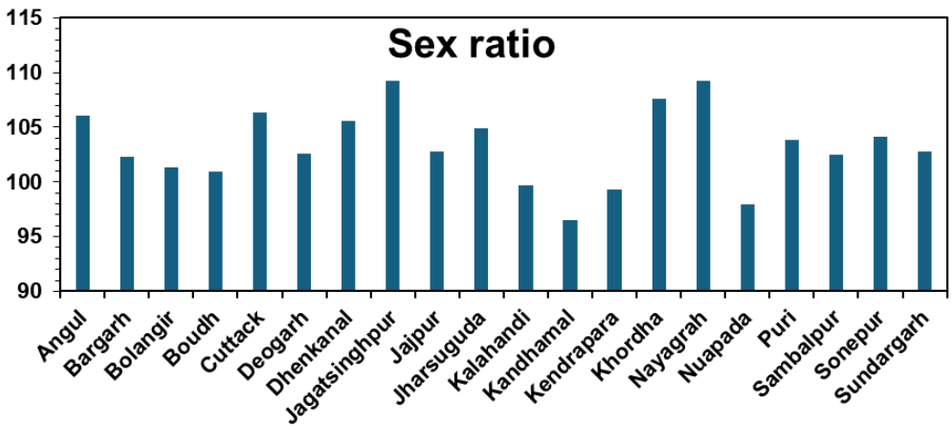


Figure 28. Sex Ratio in different districts of Odisha

Figure 28 & Table 7 contains information on the sex ratios in various districts of Odisha. The sex ratio, a demographic metric that indicates the number of males per 100 females, varies across these districts. For instance, districts like Jagatsinghpur and Nayagrah have the highest sex ratio of 109.23, indicating higher number of males compared to females. On the other hand, Kandhamal has the lowest sex ratio of 96.46, showing a higher number of females compared to males. Other districts like Angul, Cuttack, and Khordha also display higher sex ratios of around 106.

Table 7. District-wise Sex Ratio, 2011 (Census)

District	Population	Male population	Female population	Growth	Sex ratio	Literacy	Density
Anugul	1271703	654898	616805	11.55	942	78.96	199
Balangir	1648574	831349	817225	23.29	983	65.5	251
Baleshwar	2317419	1184371	1133048	14.47	957	80.66	609
Bargarh	1478833	748332	730501	9.84	976	75.16	253
Baudh	439917	220993	218924	17.82	991	72.51	142
Bhadrak	1506522	760591	745931	12.95	981	83.25	601
Cuttack	2618708	1339153	1279555	11.86	955	84.2	666
Debagarh	312164	158017	154147	13.88	976	73.07	106
Dhenkanal	1192948	612597	580351	11.82	947	79.41	268
Gajapati	575880	282041	293839	10.99	1042	54.29	133
Ganjam	3520151	1777324	1742827	11.37	981	71.88	429
Jagatsinghapur	1136604	577699	558905	7.47	967	87.13	681
Jajapur	1826275	926058	900217	12.43	972	80.44	630
Jharsuguda	579499	297014	282485	13.69	951	78.36	274
Kalahandi	1573054	785179	787875	17.79	1003	60.22	199
Kandhamal	731952	359401	372551	12.92	1037	65.12	91
Kendrapara	1439891	717695	722196	10.59	1006	85.93	545
Kendujhar	1802777	907135	895642	15.42	987	69	217
Khordha	2246341	1166949	1079392	19.65	925	87.51	799
Koraput	1376934	677864	699070	16.63	1031	49.87	156
Malkangiri	612727	303913	308814	21.53	1016	49.49	106
Mayurbhanj	2513895	1253633	1260262	13.06	1005	63.98	241
Nabarangapur	1218762	604046	614716	18.81	1018	48.2	230
Nayagarh	962215	502194	460021	11.3	916	79.17	247
Nuapada	606490	300307	306183	14.28	1020	58.2	157
Puri	1697983	865209	832774	13	963	85.37	488
Rayagada	961959	469672	492287	15.74	1048	50.88	136
Sambalpur	1044410	529424	514986	11.63	973	76.91	158
Subarnapur	652107	332897	319210	20.35	959	74.42	279
Sundargarh	2080664	1055723	1024941	13.66	971	74.13	214

4.3 Household Statistics

In Chhattisgarh, out of a total of 5,714,798 households, 79% are rural and 21% are urban. Comparatively, at the national level, India has a total of 244,921,406 households, with 73% in rural areas and 27% in urban areas. Chhattisgarh has a higher proportion of rural households (79%) compared to the national average (73%), indicating a more predominantly rural demographic structure in the state. Urban households are less prevalent in Chhattisgarh (21%) than the national average (27%). Districts such as Jashpur (93.8% rural) and Surguja (92% rural) have the highest proportion of rural households, while districts like Durg (38% urban) and Raipur (33% urban) have a relatively higher urban household presence as shown in Figure 29. This data underscores the predominantly rural composition of the state's demographic and reflecting the state's predominantly agrarian and rural character.

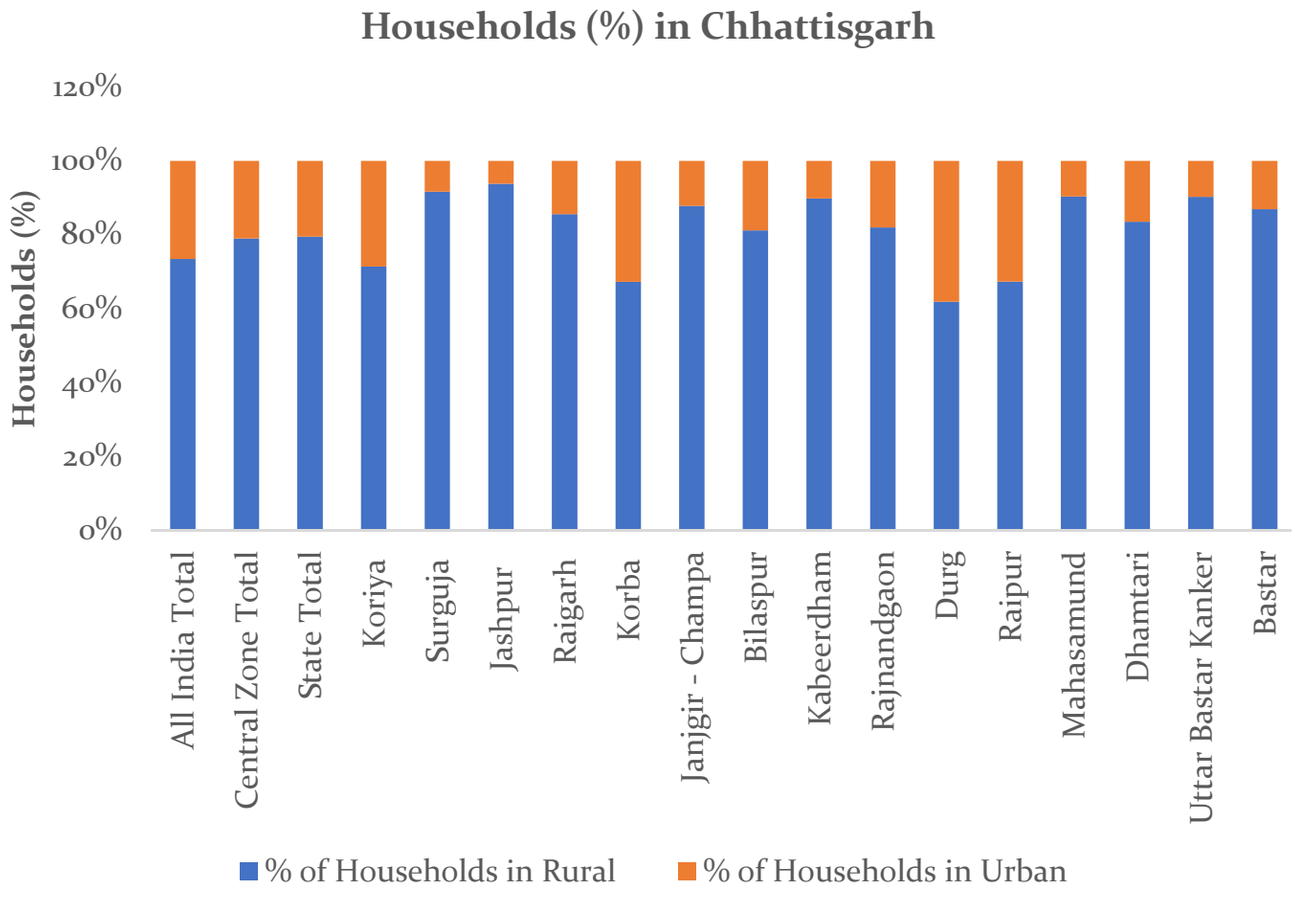


Figure 29. District-wise Rural and Urban % of Households in Chhattisgarh

As per the 2011 Census, Odisha had a total of 9,605,629households (Table 8) of these, 8,069,620 were in rural areas, constituting about 84% of the total households. Urban households numbered 1,536,009, making up the remaining 16%. The census data reflects Odisha's predominantly rural demographic, with a significant majority of the population residing in rural areas compared to urban regions.

Table 8. District-wise Number of Households (Rural & Urban)

S.No	District	Households		
		Total	Rural	Urban
1	Anugul	296168	249192	46976
2	Balangir	413833	368542	45291
3	Balasore	532281	476902	55379
4	Bargarh	369561	335487	34074
5	Bhadrak	305775	270356	35419
6	Cuttack	576934	428484	148450
7	Debagarh	75296	69924	5372
8	Dhenkanal	278550	252794	25756
9	Gajapati	127883	111829	16054
10	Ganjam	755365	594804	160561
11	Jagatsinghapur	260846	233279	27567
12	Jajpur	407059	377955	29104
13	Jharsuguda	135142	83727	51415
14	Kalahandi	400314	372518	27796
15	Kandhamal	171120	154481	16639
16	Kendrapara	321315	305348	15967
17	Keonjhar	403869	347449	56420
18	Khordha	491702	246945	244757
19	Koraput	336200	281576	54624
20	Malkangiri	136882	125633	11249
21	Mayurbhanj	583670	540571	43099
22	Nabarangapur	272537	252429	20108
23	Nayagarh	227927	210498	17429
24	Nuapada	151761	143887	7874
25	Puri	366067	312855	53212
26	Rayagada	225174	190786	34388
27	Sambalpur	248644	178758	69886
28	Subarnapur	150893	139142	11751
29	Sundargarh	476142	311281	164861
30	Baudh	106719	102188	4531
	Total	**9605629**	**8069620**	**1536009**

4.3.1. Number of Household below poverty line (Rural & Urban)

As per the data published by Ministry of Social Justice and Empowerment, Government of India, Chhattisgarh, in 2004-05, grappled with a significant poverty issue. The state's overall poverty rate was 32.7%, indicative of a substantial portion of the population living below the poverty line. However, the poverty landscape varied significantly between rural and urban areas. Rural Chhattisgarh demonstrated a higher poverty rate of 32.7%, suggesting that a larger proportion of the rural population was impoverished compared to their urban counterparts. While urban poverty was relatively lower at 33.9%, it still represented a considerable challenge.

Odisha has a population of about 42 million as of the 2011 Census and a per capita gross state domestic product of about 1450 USD (2018–19). The urban share of the population is 17%, compared to 31% nationally. Between 2005 and 2012 (the latest available figure), absolute poverty fell from 59% to 33%, the fastest rate among all Indian states. The decline was sharp in both rural and urban areas. The below map illustrates the population density below the poverty line in various districts of Odisha, with different shades representing the percentage range of the population living in poverty. The lightest shade (2-15%) indicates districts with the lowest percentage of the population below the poverty line, while the next lightest shade (15-29%) signifies districts with a moderate-low percentage. The middle shade (29-48%) represents districts with a moderate percentage, and the second darkest shade (48-58%) shows districts with a high percentage of the population below the poverty line. The darkest shade (58-71%) marks the districts with the highest levels of poverty. Notably, the western and south-western districts, along with some central regions, are marked with the darkest shades, indicating the highest levels of poverty. In contrast, the north-eastern and some central districts show lighter shades, representing lower poverty levels. This geographical variation highlights the disparities in poverty levels across Odisha, with more impoverished districts clustered in certain areas, suggesting a need for focused economic development and poverty alleviation efforts in those regions.

4.3.2. Slum Population

In Chhattisgarh, the slum population experiences significant disparities in water and sanitation (WATSAN) conditions across various districts, reflecting broader issues of urban infrastructure and public health. Raipur, the state capital, has 282 slums housing a third of the city's population, with only 35% of these slums having access to tap water as their main source. This is much lower compared to the national average of 84% for notified slums. The districts of Rajnandgaon, Dhamtari, Raigarh, and Durg also have considerable slum populations, with varying degrees of WATSAN infrastructure as shown in Table 9 below.

Table 9. Distribution of Population in Identified Slums

(*Source: Raipur Municipal Corporation 2010, Chhattisgarh state and 4, 5)*

City Name	No. of Slums	Population	No. of slums with population < 200	No. of slums with population 200 to 1,000	No. of slums with population > 1,000
Raipur	282	516,829	1	84	197
Rajnandgaon(w)	46	143,763	0	0	46
Dhamtari	20	45,620	0	0	20
Raigarh	34	40,185	0	0	34
Durg(slumwise)	58	59,495	1	26	31
Bhilai	51	161,392	0	7	44
Korba	62	159,703	0	12	50
Bilaspur	55	486,694	0	0	0
Sarguja	29	11,301	7	22	0
Total	**582**	**1,624982**	**9**	**151**	**422**

For instance, Raipur and Durg have higher percentages of slums with populations over 1,000, indicating a greater demand for services. Meanwhile, nearly 44% of non-notified slums across the state lack any form of drainage system, and around half lack latrines, exacerbating public health risks. Bhilai and Korba, both significant industrial hubs, also show high numbers of slum dwellers with inadequate access to basic amenities, which is a pressing issue given the potential for increased industrial pollution and associated health risks. These conditions contribute to a high under-five mortality rate of 72.7 per thousand live births among the urban poor, significantly above the urban average of 51.9, and a large percentage of underweight children, underscoring the need for targeted interventions to improve WATSAN facilities across these districts.

According to the 2011 Census, approximately 23% of Odisha's urban population lives in slums, amounting to about 1.17 million people. This number has been growing, reflecting the urbanization and migration trends in the state. The slum areas in Odisha face various challenges, including inadequate access to basic services such as clean water, sanitation, and healthcare. The state government has initiated several programs aimed at improving the living conditions of slum dwellers, including the provision of land rights under the JAGA Mission, which aims to make Odisha slum-free by providing land titles and improving infrastructure (Table 10).

Table 10. District-wise Slum Population

City/Town	Total	Male	Female	City/Town	Total	Male	Female
Bhubaneswar (MC + OG)	1,63,983	86,326	77,657	Dhenkanal (M)	8,896	4,388	4,508
Cuttack (MC)	1,63,766	83,502	80,264	Binika (NAC)	7,877	4,081	3,796
Raurkela (M + OG)	1,14,468	61,104	53,364	Debagarh (M)	7,947	4,036	3,911
Raurkela (ITS + OG)	1,05,138	54,778	50,360	Junagarh (NAC)	7,440	3,749	3,691
Brahmapur (MC)	91,813	46,478	45,335	Barapali (NAC)	7,349	3,694	3,655
Puri (M)	70,457	36,094	34,363	Kochinda (NAC)	6,455	3,232	3,223
Brajarajnagar (M)	49,895	25,735	24,160	Khariar (NAC)	6,550	3,283	3,267
Balangir (M)	42,034	21,703	20,331	Choudwar (M + OG)	7,168	3,626	3,542
Barbil (M)	39,706	20,490	19,216	Kesinga (NAC)	6,452	3,277	3,175
Bhawanipatna (M)	35,226	17,954	17,272	Jagatsinghapur (M)	7,172	3,623	3,549
Bargarh (M)	35,187	17,966	17,221	Jaleshwar (NAC)	6,877	3,467	3,410
Jharsuguda (M)	27,081	13,917	13,164	Titlagarh (NAC + OG)	5,586	2,870	2,716
Joda (M)	25,712	13,043	12,669	Baudhgarh (NAC)	5,690	2,847	2,843
Paradip (M)	21,488	11,330	10,158	Padmapur (NAC)	5,674	2,894	2,780
Sundargarh (M)	24,393	12,234	12,159	Kantabanji (NAC)	5,608	2,901	2,707
Baripada (M + OG)	22,877	11,838	11,039	Asika (NAC)	5,889	3,040	2,849
Sambalpur (M + OG)	22,609	11,454	11,155	Nimapada (NAC)	6,051	3,137	2,914
Hirakud (NAC)	20,461	10,592	9,869	Jajapur (M)	5,577	2,834	2,743
Bhadrak (M + OG)	25,442	12,956	12,486	Khariar Road (NAC)	5,172	2,607	2,565
Kendrapara (M)	25,462	13,283	12,179	Sonapur (M)	5,066	2,626	2,440
Rayagada (M)	20,721	10,018	10,703	G. Udayagiri (NAC)	4,660	2,330	2,330
Burla (NAC)	20,584	10,410	10,174	Khordha (M)	5,543	2,854	2,689
Anugul (M)	18,439	9,609	8,830	Phulabani (M)	4,466	2,251	2,215
Gunupur (NAC + OG)	16,648	8,196	8,452	Anandpur (M)	4,588	2,308	2,280
Byasanagar (M + OG)	16,039	8,231	7,808	Udala (NAC)	3,738	1,855	1,883
Jeypur (M)	14,554	7,278	7,276	Konark (NAC)	3,975	1,984	1,991
Soro (NAC)	15,945	8,054	7,891	Kashinagar (NAC)	2,994	1,402	1,592
Koraput (NAC)	12,822	6,241	6,581	Umarkote (NAC)	3,091	1,540	1,551
Biramitrapur (M)	13,696	6,921	6,775	Pattamundai (NAC)	3,716	1,879	1,837
Belpahar (M)	12,883	6,540	6,343	Balimela (NAC)	2,847	1,370	1,477
Baleshwar (M + OG)	12,570	6,350	6,220	Kamakshyanagar (NAC)	2,478	1,263	1,215
Sunabeda (NAC).	11,753	5,887	5,866	Chhatrapur (NAC)	2,730	1,412	1,318
Talcher (M)	10,971	5,671	5,300	Jatani (M + OG)	2,359	1,214	1,145
Rajagangapur (M)	11,450	5,697	5,753	Gudari (NAC)	2,024	988	1,036
Rairangpur (NAC + OG)	9,756	4,924	4,832	Nilagiri (NAC)	2,042	1,033	1,009
Malkangiri (NAC)	9,250	4,711	4,539	Tarbha (NAC)	1,823	926	897
Nabarangapur (M + OG)	8,783	4,365	4,418	Bhuban (NAC)	2,020	1,051	969
Paralakhemundi (M + OG)	8,945	4,361	4,584	Kendujhar (M)	1,706	850	856

5 Socio-Economic Characteristics

5.1 Population Health

5.1.1. Birth Rate and Death Rate

From 2009 to 2012, Chhattisgarh exhibited a higher birth rate compared to the national average, reflecting a higher fertility rate in the state as shown in Table 11. The birth rate in Chhattisgarh decreased from 25.7 per 1,000 people in 2009 to 24.5 in 2012, while India's overall birth rate also saw a reduction from 22.5 to 21.6 during the same period. This decline suggests improvements in family planning and awareness initiatives. However, Chhattisgarh's death rate remained consistently higher than the national average, particularly in rural areas, highlighting disparities in healthcare access and quality. The death rate in the state fell from 8.1 per 1,000 people in 2009 to 7.9 in 2012, whereas the national rate decreased from 7.3 to 7.0. The rural-urban divide in both birth and death rates underscores the need for enhanced healthcare services and infrastructure, especially in rural regions, to address higher mortality rates and promote better health outcomes.

Table 11. Birth Rate, Death Rate & Infant Mortality Rate in Chhattisgarh & India (Source: SRS Bulletin)

Year	Birth Rate (per '000 person)			Death Rate (per '000 person)			Infant Mortality Rate (on per '000 live birth)		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
2	3	4	5	6	7	8	9	10	11
2009	22.5	24.1	18.3	7.3	7.8	5.8	50	55	34
	25.7	27.2	19.0	8.1	8.5	6.4	54	55	47
2010	22.1	23.7	18.0	7.2	7.7	5.8	47	51	31
	25.3	26.8	18.6	8.0	8.4	6.2	51	52	44
2011	21.8	23.3	17.6	7.1	7.6	5.7	48	49	41
	24.9	26.3	18.3	7.9	8.3	6.1	48	49	41
2012	21.6	23.1	17.1	7.0	7.6	5.6	42	46	28
	24.5	26.0	18.0	7.9	8.3	5.9	47	48	39
India Chhattisgarh									

Odisha, like many other Indian states, has been striving to improve its population's health through various initiatives and programs. Below are some key health indicators related to mortality rate, life expectancy, and other relevant health metrics:

Mortality Rates: According to recent data, the crude birth rate in Odisha is approximately 20.3 births per 1,000 people. This rate reflects a gradual decline over the past decades as various health and family welfare programs have been implemented. The crude death rate in Odisha is about 7.9 deaths per 1,000 populations. This figure has also gradually decreased, attributable to improvements in healthcare facilities and better access to medical services.

The life expectancy at birth in Odisha is around 69 years. This statistic indicates an improvement in the state's overall health conditions and living standards.

Table 12. Birth Rate, Death Rate & Infant Mortality Rate in Odisha

S. No	District	Literacy Rate (in %)		
		Literacy Rate (in %)	Male	Female
1	Anugul	77.53	85.98	68.64
2	Balangir	64.72	75.85	53.5
3	Balasore	79.79	87	72.28
4	Bargarh	74.62	83.68	65.38
5	Bhadrak	82.78	89.64	75.83
6	Cuttack	85.5	91.11	79.55
7	Debagarh	72.57	81.92	63.05
8	Dhenkanal	78.76	86.18	71
9	Gajapati	53.49	64.38	43.18
10	Ganjam	71.09	80.99	61.13
11	Jagatsinghapur	86.59	92.38	80.63
12	Jajpur	80.13	86.84	73.29
13	Jharsuguda	78.86	86.61	70.73
14	Kalahandi	59.22	71.9	46.68
15	Kandhamal	64.13	76.93	51.94
16	Kendrapara	85.15	91.45	78.96
17	Keonjhar	68.24	78.12	58.28
18	Khordha	86.88	91.78	81.61
19	Koraput	49.21	60.32	38.55
20	Malkangiri	48.54	59.07	38.28
21	Mayurbhanj	63.17	73.76	52.17
22	Nabarangapur	46.43	57.31	35.8
23	Nayagarh	80.42	88.16	72.05
24	Nuapada	57.35	70.29	44.76
25	Puri	84.67	90.85	78.28
26	Rayagada	49.76	61.04	39.19
27	Sambalpur	76.22	84.35	67.93
28	Subarnapur	74.42	84.4	64.04
29	Sundargarh	73.34	81.01	65.48
30	Baudh	71.61	83.34	59.79
	Total	**72.87**	**81.59**	**64.01**

5.1.2. Infant Mortality Rate

The Infant Mortality Rate (IMR) in Chhattisgarh showed a notable decline from 2009 to 2012 but remained above the national average, indicating ongoing challenges in maternal and child healthcare. Chhattisgarh's IMR decreased from 54 per 1,000 live births in 2009 to 47 in 2012, while India's IMR dropped from 50 to 42 during the same period. The data reveals a significant

rural-urban disparity, with rural areas experiencing a consistently higher IMR than urban areas. In 2012, the IMR in rural Chhattisgarh was 48, compared to 39 in urban areas, suggesting that healthcare services are less accessible or effective in rural regions. Factors contributing to the high IMR in rural areas may include inadequate healthcare infrastructure, limited access to prenatal and postnatal care, and lower health literacy. Addressing these issues requires targeted interventions, such as improving healthcare facilities, training healthcare workers, and increasing awareness about maternal and child health, to further reduce infant mortality rates and ensure healthier outcomes for newborns and their mothers.

Odisha has significantly reduced its **Infant Mortality Rate (IMR)** in recent years, but it remains higher than the national average. As of recent data, the IMR in Odisha stands at approximately 36 deaths per 1,000 live births (2019-2021), compared to the national average of around 28 per 1,000 live births. High IMR is largely attributed to factors such as poor maternal health, inadequate neonatal care, malnutrition, and lack of access to healthcare facilities in rural and tribal areas. In the year 2001 when IMR was 97 per 1000 live births, the State Govt. decided to launch IMR Mission to focus more on interventions addressing more proximal determinants of infant mortality. As a result, the IMR has reduced to 46, 44, 41, 40 & 38 per 1000 live births in 2015, 2016, 2017, 2018 & 2019 respectively.

Odisha’s **Maternal Mortality Rate (MMR)** has improved but is still concerning. The current MMR is estimated to be around 136 deaths per 100,000 live births (2018-2020), which is better than some Indian states but higher than the national average. Factors contributing to maternal mortality include lack of access to quality maternal healthcare, inadequate antenatal and postnatal care, and complications such as haemorrhage and sepsis during childbirth.

Odisha's **Under-Five Mortality Rate (U5MR)** has also seen a decline. It is currently around 41 deaths per 1,000 live births, a marked improvement but still higher than the national average. Malnutrition, infectious diseases, and poor sanitation are some of the leading causes of child mortality.

5.1.3. Life expectancy

According to the 2011 Census of India, the life expectancy in Chhattisgarh was 65.3 years at birth. This figure is slightly below the national average life expectancy of 66.1 years. The average life expectancy in India, as per the same census data, was differentiated by sex, with men having a life expectancy of 64.6 years and women 67.7 years. In comparison, life expectancy for males in Chhattisgarh was 63.6 years and for females 66.8 years during the 2011-15 periods.

Population aging in Chhattisgarh is notable, with elderly individuals over 60 years constituting 8.7% of the state's total population. The life expectancy at 60 years is 14.4 years for males and 16.3 years for females based on data from 2014-2018. The old age dependency ratio in 2011 was 13.1, with 12 for males and 14.2 for females. This ratio varied between 13.9 in rural areas and 10.5 in urban areas.

From 2006-10 to 2014-18, life expectancy at birth in Chhattisgarh improved from 62.4 years to 65.2 years. In comparison to the rest of India, where the life expectancy at birth is 69.4 years, Chhattisgarh's rate stands lower at 65.2 years. For the 2011-15 periods, life expectancy at birth in Chhattisgarh was 65.2 years, with males at 63.0 years and females at 65.9 years, compared to the all-India figures of 66.9 years for males and 68.7 years for females.

As per the Sample Registration System (SRS) Abridged Life Tables for 2011-15, conducted by the Office of the Registrar General & Census Commissioner, India, Chhattisgarh recorded the lowest life expectancy at birth among urban areas for both males and females. At age 70, life expectancy in Chhattisgarh was notably low, with males having an expectancy of 7.9 years and females 10.0 years. Conversely, Jammu & Kashmir reported the highest life expectancy at age 70, with males having 13.3 years and females 17.2 years. For infants, the highest life expectancy for females was observed in Jammu & Kashmir, followed by Kerala and Himachal Pradesh, while Assam, Chhattisgarh, and Jharkhand had the lowest life expectancies.

Overall, the life expectancy at birth in Chhattisgarh improved to 65.2 years from the earlier 62.4 years, though it remains below the national average of 69.4 years. These figures highlight ongoing disparities in life expectancy between Chhattisgarh and the national averages, reflecting areas where health interventions and improvements could be targeted.

The life expectancy at birth in Odisha is approximately **68.8 years** (2019-2021), which is below the national average of around 70 years. There is also a slight gender disparity, with life expectancy for females being higher (69.7 years) than for males (67.8 years). This is consistent with global trends where women generally live longer than men.

Life expectancy has gradually improved over the years, reflecting better access to healthcare, sanitation, and nutrition, but remains lower due to challenges in rural healthcare access and high disease burden in certain areas.

5.2 Education Level

According to the 2011 Census, Chhattisgarh's total literate population was 13,197,368, divided between urban and rural areas. Urban districts like Raipur (941,106), Durg (844,175), and Bilaspur (456,954) had high literacy figures. Rural areas, while having lower literacy numbers compared to urban regions, still contributed significantly, with districts such as Bilaspur (763,383) and Raigarh (768,151) showcasing considerable literate populations (Table 13). This highlights the contrast in educational attainment between urban and rural populations.

The 2011 Census reveals distinct literacy disparities between males and females across Chhattisgarh's urban and rural areas as mentioned in Table 13 and Figure 30. In urban areas, males generally have higher literacy rates, with significant numbers in districts like Raipur (515,750 males), Durg (461,882 males), and Bilaspur (251,264 males). Female literacy, though significant in urban areas, remains lower, with notable figures in Raipur (425,356 females),

Durg (382,293 females), and Bilaspur (205,690 females). In rural areas, this disparity is more pronounced; for example, Bastar has 165,943 literate males compared to 110,012 literate females. These gender gaps highlight the need for targeted educational initiatives to bridge this divide.

The trends in literacy rates for males and females in Chhattisgarh display a notable urban-rural divide. Urban areas consistently show higher literacy rates for both genders, such as in Durg district, where urban male literacy is 92.14% and female literacy is 80.01%, compared to rural rates of 85.64% for males and 66.01% for females. Raipur similarly exhibits an urban male literacy rate of 90.60% and a female literacy rate of 78.94%, compared to rural rates of 83.99% for males and 63.89% for females. These patterns indicate significant challenges, particularly in improving female literacy in rural areas, where socio-economic and cultural barriers often restrict educational access. Addressing these disparities is crucial for achieving equitable literacy outcomes across the state.

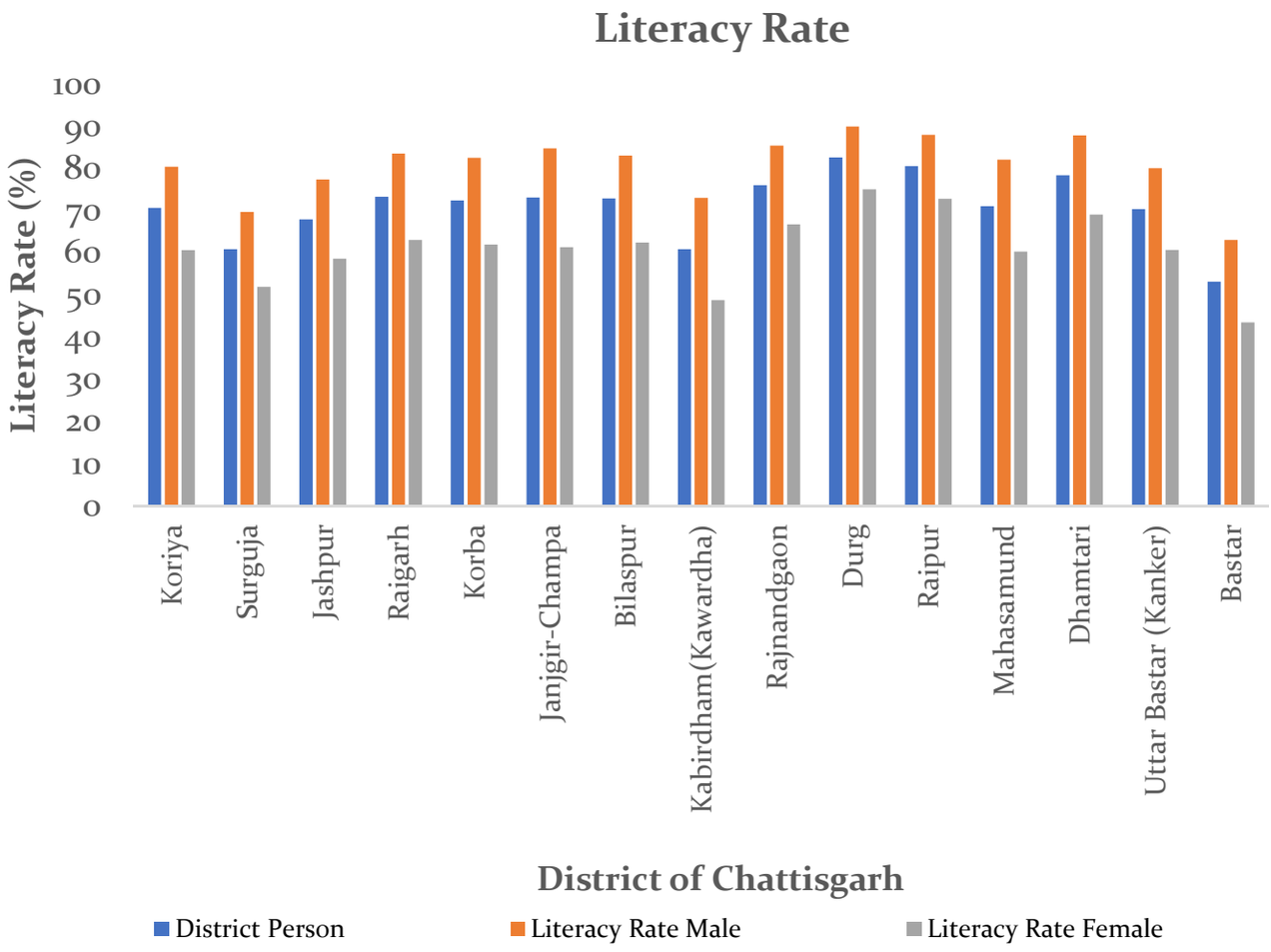


Figure 30. District-wise Literacy Rate in districts of Chhattisgarh

Table 13. District wise Urban/ Rural Literacy & Literacy Rate of Chhattisgarh (Source: Census 2011)

S. No.	District	Urban						Rural					
		No's			Literacy Rate (%)			No's			Literacy Rate (%)		
		Total Literate	Male	Female	Literacy Rate	Male	Female	Total Literate	Male	Female	Literacy Rate	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Koriya	148667	84072	64595	81.49	89.03	73.41	249156	145851	103305	65.45	76.11	54.64
2	Surguja	104416	56888	47528	87.07	92.10	81.74	330319	194047	136272	55.57	65.00	46.06
3	Jashpur	55597	30039	25558	83.83	89.66	77.87	439818	250617	189201	66.33	76.06	56.72
4	Raigarh	183488	101425	82063	85.22	92.01	78.09	768151	441331	326820	70.89	81.75	60.10
5	Korba	326009	183527	142482	83.65	90.73	76.02	422750	249864	172886	65.55	77.32	53.73
6	Janjgir-Champa	160234	89935	70299	81.80	90.71	72.66	859400	503744	355656	71.64	83.73	59.48
7	Bilaspur	456954	251264	205690	84.87	90.99	78.44	763383	454040	309343	67.18	79.22	54.93
8	Kabirdham (Kawardha)	56866	31517	25349	76.38	84.14	68.53	357301	216986	140315	58.94	71.61	46.29
9	Rajnandgaon	205453	110131	95322	85.43	91.59	79.26	802926	451224	351702	73.86	84.01	63.95
10	Durg	844175	461882	382293	86.22	92.14	80.01	403715	228188	175527	75.84	85.64	66.01
11	Raipur	941106	515750	425356	84.93	90.60	78.94	554039	316132	237907	73.99	83.99	63.89
12	Mahasamund	85896	46918	38978	81.83	89.37	74.28	552067	317171	234896	69.59	81.06	58.42
13	Dhamtari	111008	59874	51134	84.26	91.26	77.32	435825	244050	191775	76.98	86.96	67.17
14	Uttar Bastar (Kanker)	59183	31235	27948	86.90	92.46	81.43	396859	227063	169796	68.34	78.58	58.19
15	Bastar	100049	54513	45536	83.43	89.68	77.00	275955	165943	110012	46.97	57.41	36.85

The total literate population in Odisha was approximately 28 million. This figure includes both urban and rural population literates, with rural areas constituting about 22.2 million and urban areas around 5.44 million (Table 14).

Table 14. Total Literate Population of Odisha state

S.No	District	Literates (Persons)		
		Total	Rural	Urban
1	Anugul	889122	728347	160775
2	Balangir	944254	795185	149069
3	Balasore	1647895	1454944	192951
4	Bargarh	994056	879695	114361
5	Bhadrak	1106962	975418	131544
6	Cuttack	1993561	1383299	610262
7	Debagarh	199877	183301	16576
8	Dhenkanal	841988	746712	95276
9	Gajapati	267697	217835	49862
10	Ganjam	2244408	1659800	584608
11	Jagatsinghapur	900104	807648	92456
12	Jajpur	1302292	1199274	103018
13	Jharsuguda	405652	231875	173777
14	Kalahandi	818396	728801	89595
15	Kandhamal	1007383	950743	56640
16	Kendrapara	1105385	1038744	66641
17	Keonjhar	1069023	895252	173771
18	Khordha	1771198	865256	905942
19	Koraput	579203	415850	163353
20	Malkangiri	250964	219278	31686
21	Mayurbhanj	1392207	1242182	150025
22	Nabarangapur	490161	429046	61115
23	Nayagarh	681522	617601	63921
24	Nuapada	303559	279552	24007
25	Puri	1309170	1094584	214586
26	Rayagada	417632	313037	104595
27	Sambalpur	716410	478196	238214
28	Subarnapur	428333	390978	37355
29	Sundargarh	1357840	787605	570235
30	Baudh	276122	259955	16167
	Total	27712376	22269993	5442383

The literacy figure also includes both male and female literates, with males constituting about 15.2 million and females around 11.78 million (Table 15).

Table 15. Total Male and Female Literate Population of Odisha

District	Rural			Urban		
	Total Literate	Male	Female	Total Literate	Male	Female
Anugul	728347	412862	315485	160775	8997	70800
Balangir	795185	476677	318508	149069	82388	66681
Balasore	1454944	814701	640243	192951	103706	89245
Bargarh	879695	500749	378946	114361	62346	52015
Bhadrak	975418	530040	445378	131544	71525	60019
Cuttack	1383299	764856	618443	610262	328368	281894
Debagarh	183301	104800	78501	16576	9107	7469
Dhenkanal	746712	419810	326902	95276	51871	43405
Gajapati	217835	130316	87519	49862	27014	22848
Ganjam	1659800	960653	699147	584608	322504	262104
Jagatsinghapur	807648	437288	370360	92456	51113	41343
Jajpur	1199274	658877	540397	103018	55800	47218
Jharsuguda	231875	131262	100613	173777	97453	76324
Kalahandi	728801	445435	283366	89595	49752	39843
Kandhamal	950743	208661	142082	56640	30609	26031
Kendrapara	1038744	553933	484811	66641	35751	30890
Keonjhar	895252	517171	378081	173771	98854	74917
Khordha	865256	476715	388541	905942	495612	410330
Koraput	415850	258634	157216	163353	89813	73540
Malkangiri	219278	132803	86475	31686	18247	13439
Mayurbhanj	1242182	728618	513564	150025	81036	68989
Nabarangapur	429046	265122	163924	61115	33571	27544
Nayagarh	617601	352469	265132	63921	35163	28758
Nuapada	279552	170734	108818	24007	13315	10692
Puri	1094584	600491	494093	214586	115652	98934
Rayagada	313037	190583	122454	104595	58276	46319
Sambalpur	478196	271053	207143	238214	130031	108183
Subarnapur	390978	227777	163201	37355	21116	16239
Sundargarh	787605	446024	341581	570235	315514	254721
Baudh	259955	152469	107486	16167	8971	7196

The overall literacy rate in Odisha was 72.87%, with male literacy at 81.59% and female literacy at 64.01%. The state has made significant strides in improving literacy, contributing to socio-economic development and bridging the gender gap in education. However, challenges remain in rural and marginalized communities where literacy rates are still lower than the state average.

5.3 Migration

Chhattisgarh, an Empowered Action Group (EAG) state in India, is distinguished by its high proportion of Scheduled Tribe (ST) population and its economic challenges. According to Census 2011, approximately 30.6% of Chhattisgarh's population, which translates to about 7.8 million people, are STs. This substantial ST demographic, coupled with the state's economic conditions, significantly influences its migration patterns.

Census 2011 data reveals that 8.41% of Chhattisgarh's population, approximately 693,632 people, are inter-state out-migrants, while a dominant 91.59%, or about 7.55 million people, are intra-state migrants. This indicates that a significant majority of migration occurs within the state's boundaries. Among intra-state migrants, 71.32% (around 5.38 million people) move within the same district, whereas 28.68% (approximately 2.17 million people) relocate to different districts within the state.

Table 16. Reason for migration as per the 2011 census

Reasons for Migration	Male Migrants	Female Migrants	Intra-State Male Migration among ST Community	Intra-State Female Migration among ST Community
Work/Employment	46.61	8.93	28.14	2.06
Business	1.44	0.38	0.16	0.10
Education	2.26	0.71	8.69	1.98
Marria!!C	3.01	57.70	9.95	81.21
Moved aft er birth	5.39	2.32	6.11	1.16
Moved with household	25.70	20.56	22.07	7.07
Others	15.58	9.39	24.88	6.43
Total	**100.00**	**100.00**	**100.00**	**100.00**

Regarding the reasons for migration, work and employment are major driving factors as summarized in Table 16. For male migrants from Chhattisgarh, 47% (about 2.54 million individuals) relocate for work-related reasons, reflecting the economic challenges faced in the state and the reliance on migration as a livelihood strategy. Additionally, 3.72% (approximately 0.2 million people) move for educational purposes, slightly above the national average. Female migration is predominantly driven by marriage, accounting for 57.70% (around 0.8 million individuals) of female migrants. However, a notable 8.93% (about 0.12 million people) of female migrants also relocate for work or employment.

When examining inter-state migration destinations, Maharashtra stands out as the primary destination for migrants from Chhattisgarh, receiving 26.17% of out-migrants, which equates to about 181,551 individuals. This preference is likely due to better employment

opportunities and economic conditions in Maharashtra. Madhya Pradesh, a neighbouring state, receives 19.66% of Chhattisgarhi migrants, roughly 136,746 people, reflecting economic and cultural ties. Odisha, another neighbouring state with significant mining activities, attracts 13.07% of migrants, approximately 90,690 individuals. Additionally, 10.74% of Chhattisgarhi migrants move to Uttar Pradesh, translating to about 74,606 individuals, driven by economic prospects.

These migration statistics illustrate the intricate relationship between Chhattisgarh's economic conditions and migration trends. The high rate of intra-state migration suggests a lack of sufficient economic opportunities within local districts, prompting people to seek opportunities elsewhere, either within the state or in neighbouring regions. This data underscores the state's reliance on migration for economic sustenance and highlights the need for addressing underlying economic challenges to potentially reduce migration rates and improve local livelihoods.

Odisha's urban centres like Bhubaneswar, Cuttack, and Rourkela which are also the three Municipal Corporation in Mahanadi basin attract rural migrants from other parts of the state in search of jobs in the service, construction, and informal sectors. This type of migration has contributed to the growth of these cities.

With Odisha's significant industrial growth, especially in sectors like steel, mining, and power, the state attracts skilled and semi-skilled labour from other parts of India. Workers from states like Bihar, Jharkhand, and West Bengal are employed in Odisha's industrial belts. Odisha receives seasonal labourers from nearby states like West Bengal and Jharkhand, especially during agricultural peak seasons or for work in the construction and infrastructure sectors. Large-scale infrastructure projects, such as road construction, power plants, and port development, have attracted labour from other states. The Paradip port area, for example, employs many migrant workers.

5.4 Employment and Occupation

5.4.1. Total Working Population

The well-being of a nation's economy is closely tied to the contribution of its working population. A key metric in understanding this relationship is the workforce participation rate (WPR), which measures the proportion of the working-age population actively engaged in the labour force. A high WPR indicates a larger pool of potential economic contributors, while a low WPR suggests a greater dependency burden on the working population. Factors influencing WPR include demographics, education levels, economic conditions, and social norms.

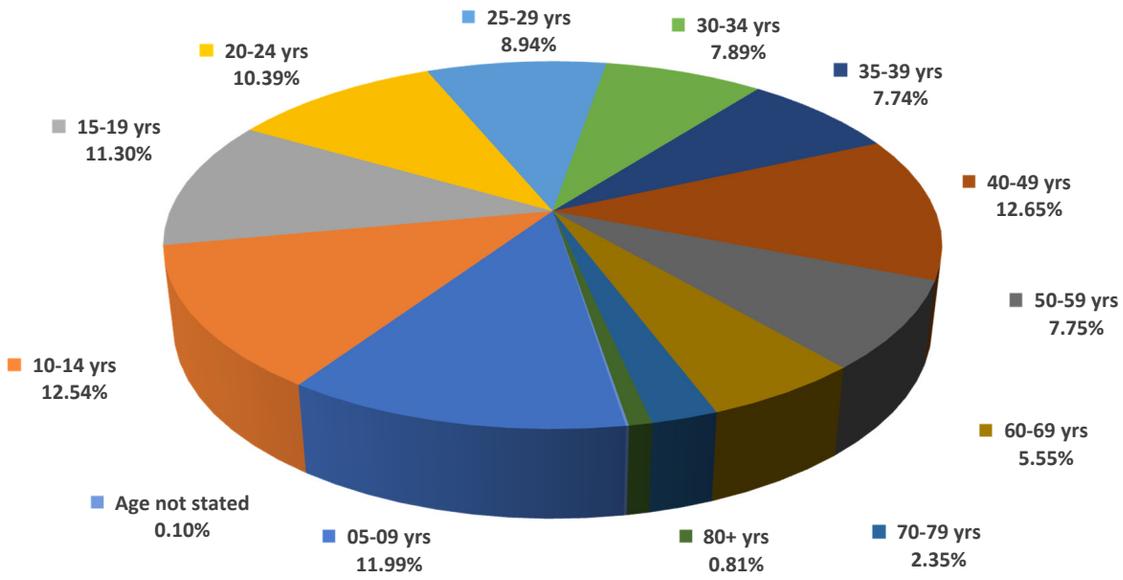


Figure 31. Working population of different age group in Chhattisgarh

The Figure 31, Figure 32, and Figure 33 provides a detailed breakdown of the working population in Chhattisgarh State (according to the 2011 census) categorized by age group, gender, and location (rural or urban) respectively. The total working population in Chhattisgarh State is 12,180,225, representing nearly half (47.7%) of the state's total population (25,545,198). Key findings indicate that the state have higher working population in the rural areas (10,063,114), as compared to urban areas (2,117,111). Also, the age groups of 25-49 exhibit the highest working population, contributing significantly to the state's economic activity. In terms of working population, Raipur, Durg, and Bilaspur districts stand out with the highest numbers, while Koriya and Kanker districts have the lowest when compared to the rest of the state.

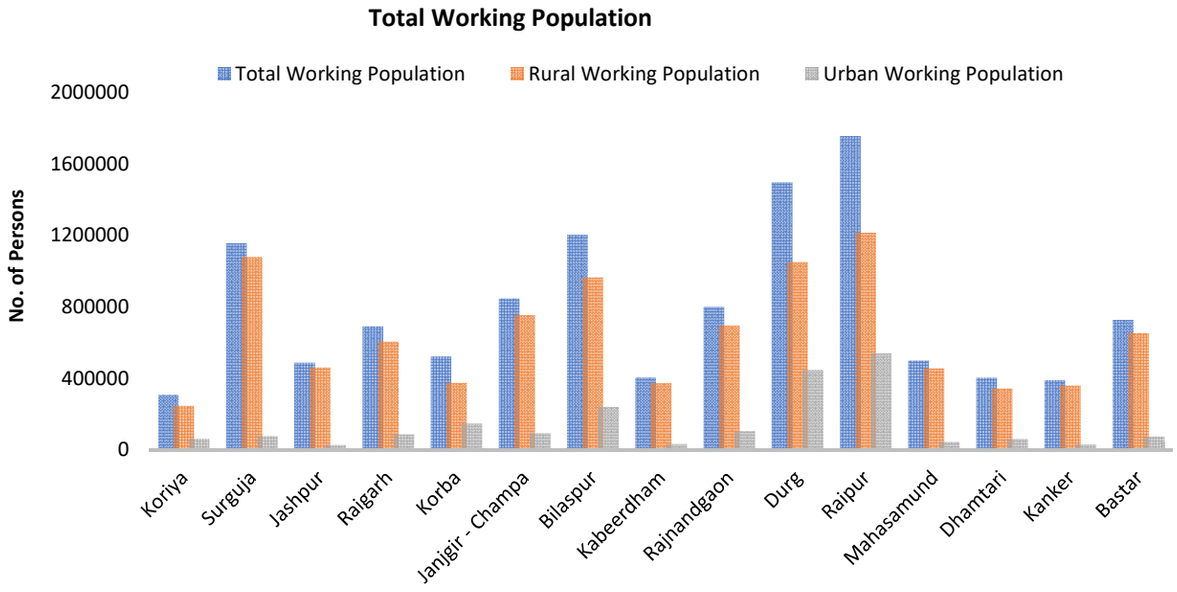


Figure 32. Working Population (Rural and Urban) of Chhattisgarh (Census 2011)

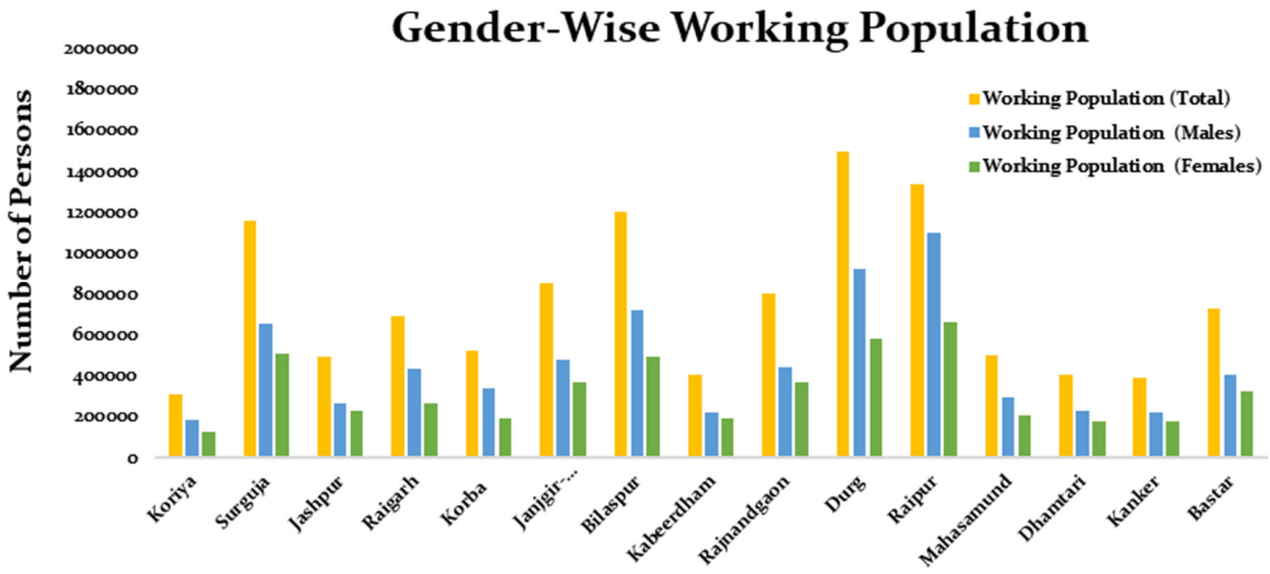


Figure 33. Gender-wise Working Population of Mahanadi Basin (Chhattisgarh)

In Odisha about 44.04% (17,026,642) of the population in the basin are workers and 55.96% (21,634,023) are non-workers. About 41.79% (17,541,589) of the population in the state are workers, and 58.21% (24,432,629) are non-workers. The number of workers has increased since the last decade by 2.18%. The number of marginal workers has increased from 27.70% (3,712,257) in 2001 to 32.55% (5,541,793) in 2011. The working class can be categorized into cultivators or farmers, agricultural laborers, industrial workers and other workers (including government and private sector). The following (Figure 34) charts enumerate the working-class population in Odisha.

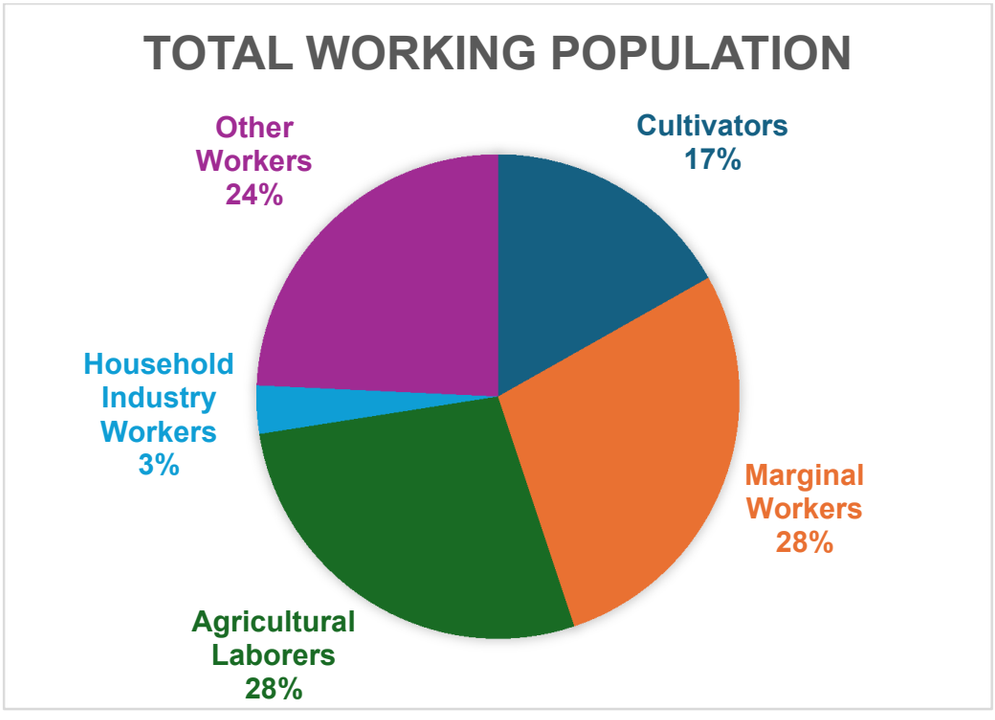
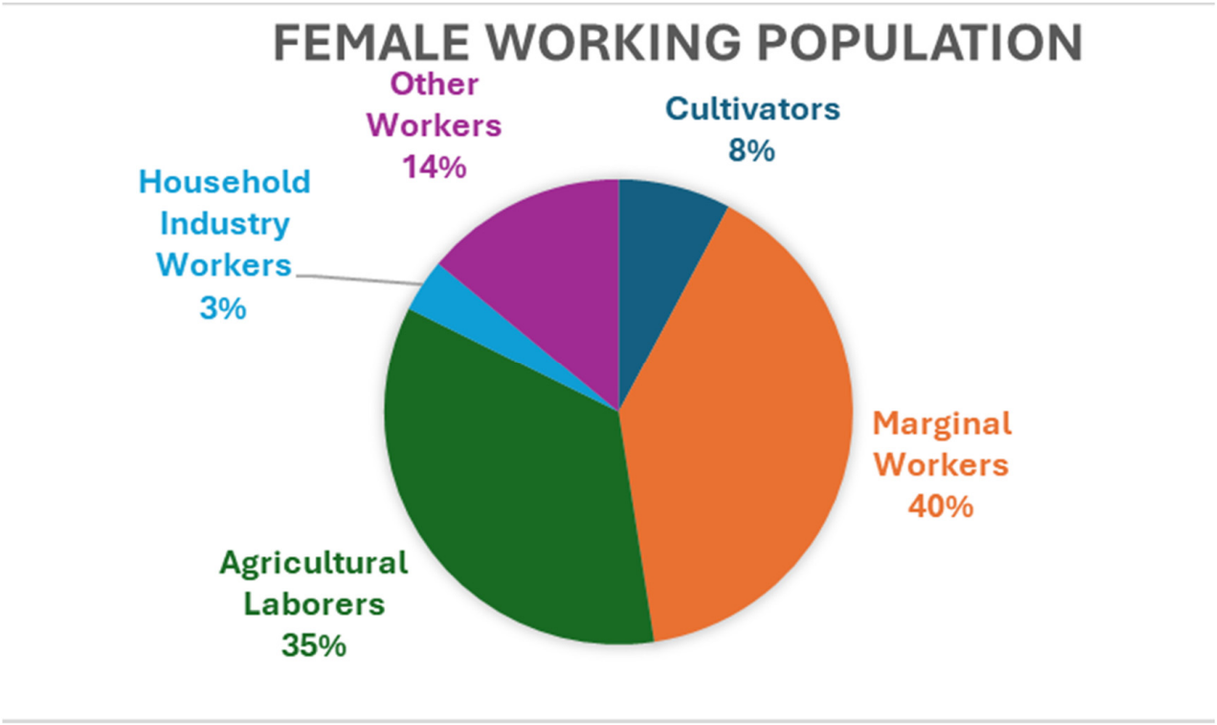
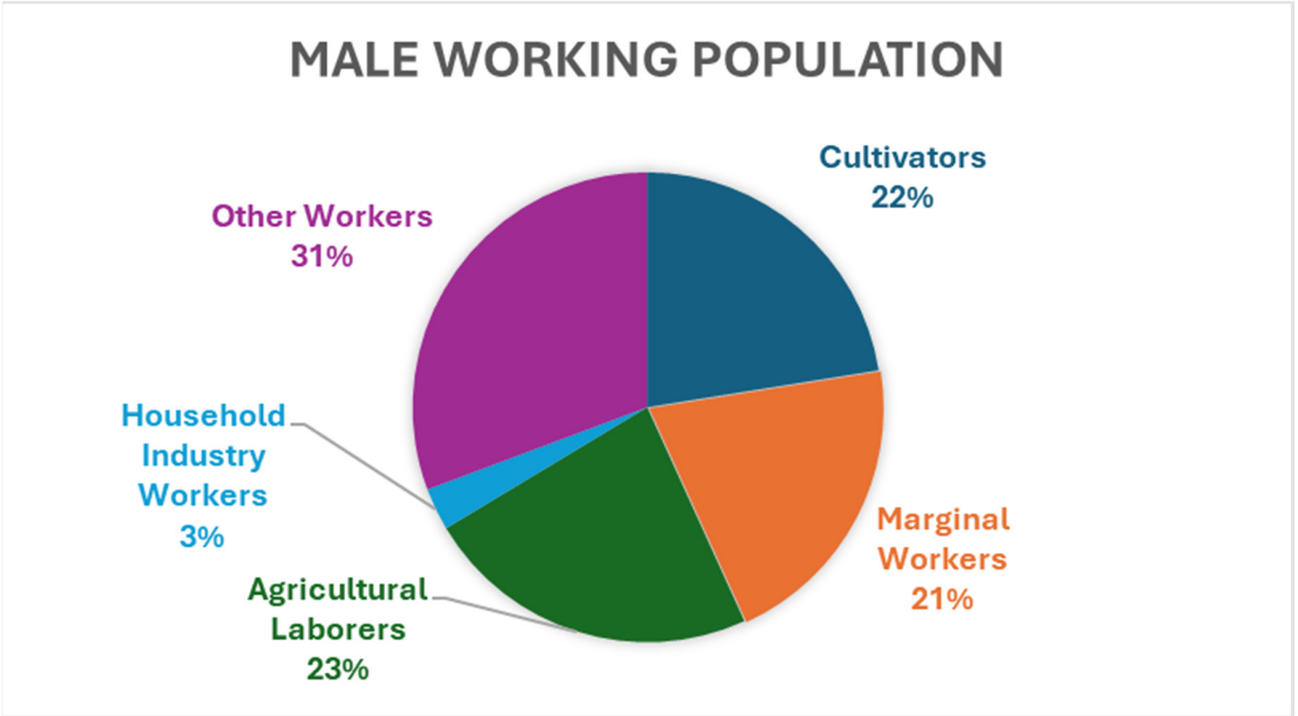


Figure 34. Total Working Population of Mahanadi Basin (Odisha)

Overall, about 46.11% (1,75,41,589) of the population in the state are male workers, and 27.16% (2,44,32,629) are female workers (Census, 2011). The following charts (Figure 35) enumerate the male and female working-class population in different categories in Odisha.



(a)



(b)

Figure 35. (a) Female and (b) Male Working Population of Mahanadi Basin (Odisha)

5.4.2. Total Work Force Participation Ratio

Figure 36 provide a district-level breakdown of the workforce participation rates (WPR) in Chhattisgarh State, categorized by gender and location (rural or urban) according to the 2011 census.

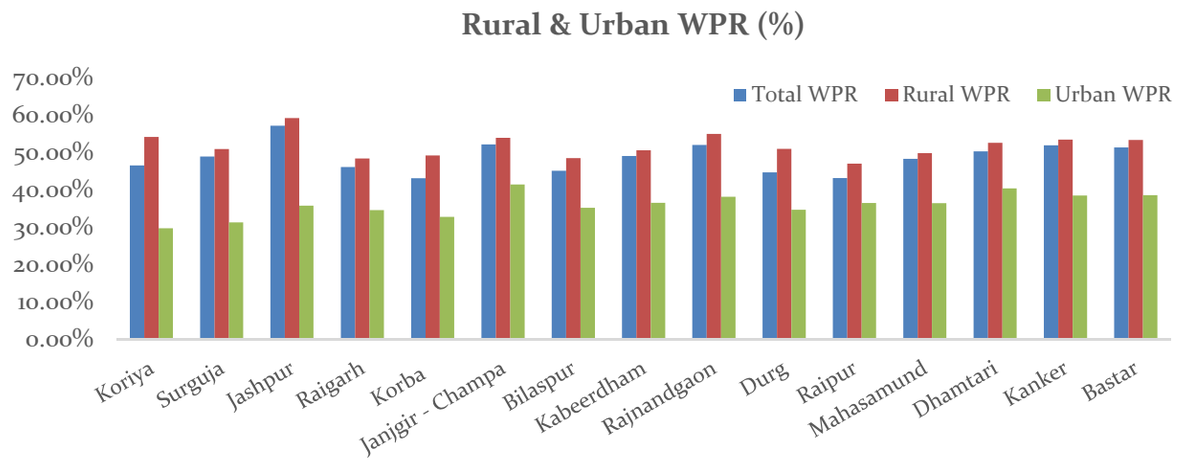


Figure 36 District-wise Rural and Urban Work Force Participation Ratio

The analysis reveals significant disparities in WPR both across districts and between genders. Rural areas consistently exhibit higher WPRs compared to urban areas, indicating a greater dependence on agriculture and allied sectors. Furthermore, male WPRs surpass female WPRs in all categories, highlighting gender-based disparities in labour force participation (Figure 37). The data underscores the need for region-specific policies to address these disparities and promote inclusive economic growth. A deeper analysis, incorporating factors such as education levels, occupation types, and access to infrastructure, is essential to understand the underlying causes of these variations and inform targeted interventions.

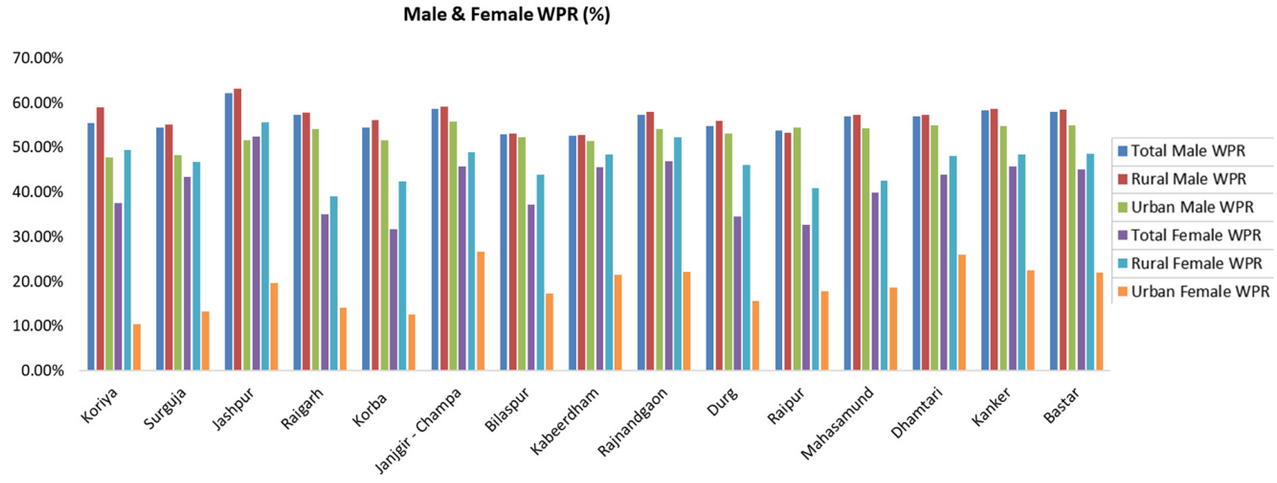


Figure 37. District-wise Male & Female Work Force Participation Ratio (WPR)

As per the 2011 Census, the total workforce participation rate in Odisha was 41.79%. Out of the state's total population, 17,541,589 individuals were recorded as part of the workforce (Table 17).

Table 17. District-wise Male and Female Working Population (Odisha)

Sl. No	Name of the Dist.	Total worker		Main workers		Marginal workers	
		Male	Female	Male	Female	Male	Female
1	Baragarh	473305	288787	372806	101584	100499	187203
2	Jharsuguda	172018	75689	137683	34386	34335	41303
3	Sambalpur	313161	192679	242724	94130	70437	98549
4	Deogarh	92384	73051	59636	23772	32748	49279
5	Sundergarh	584687	288540	430698	104414	153989	184126
6	Keonjhar	498077	268437	362695	79802	135382	188635
7	Mayurbhanj	697782	525752	407902	140488	289880	385264
8	Balasore	684020	248687	540777	77287	143243	171400
9	Bhadrak	409559	59040	302986	25111	106573	33929
10	Kendrapara	386382	80508	295890	26375	90492	54133
11	Jagatsinghpur	325589	78060	256080	34090	69509	43970
12	Cuttack	761876	174489	615670	80604	146206	93885
13	Jajpur	486091	66143	375457	32107	110634	34036
14	Dhenkanal	340552	94981	245235	32103	95317	62878
15	Angul	360947	165573	257720	59827	103227	105746
16	Nayagarh	284591	59042	207430	21646	77161	37396
17	Khordha	645880	146313	543178	89447	102702	56866
18	Puri	498461	123215	399235	51301	99226	71914
19	Ganjam	990027	511745	718163	182581	271864	329164
20	Gajapati	155907	138026	111464	58907	44443	79119
21	Kalahandi	193515	161834	123078	44034	70437	117800
22	Boudh	125627	93830	92432	31292	33195	62538
23	Subernapur	181595	105066	136043	34175	45552	70891
24	Bolangir	469956	250645	332355	69872	137601	180773
25	Nuapada	168155	137283	116827	34867	51328	102416
26	Kalahandi	447290	304640	299835	76922	147455	227718
27	Rayagada	258032	209090	164965	62850	93067	146240
28	Nabarangpur	342641	268265	227544	51571	115097	216694
29	Koraput	384053	309353	286001	110459	98052	198894
30	Malkangiri	170495	140171	131904	47126	38591	93045
Total		**11902655**	**5638934**	**8794413**	**1913130**	**3108242**	**3725804**

The male workforce participation rate stood at 57.88%, while the female rate was notably lower at 25.29%. This includes 11,902,655 males and 5,638,934 females, indicating a significant gender disparity in workforce participation (Tables 17). These figures highlight the need for addressing gender inequality in employment opportunities and encouraging higher female participation in the state's labor market.

5.4.3. Income Level (per capita income, GSDP)

Trends in Gross State Domestic Product - The Gross State Domestic Product (GSDP) of Chhattisgarh has exhibited notable growth over recent years. In 2013-14, the GSDP at current prices was ₹1,85,682.48 crore, increasing to an estimated ₹2,10,191.79 crore in 2014-15. At constant prices (base year 2004-05), the GSDP was ₹95,262.45 crore in 2013-14 and rose to an estimated ₹1,00,842.47 crore in 2014-15. This consistent growth trajectory highlights the state's economic expansion.

Table 18. Trends in GSDP compared to the GDP

(Source: GoI's Economic Survey (2021-22) and Directorate of Economics and Statistics)

Year	2017-18	2018-19	2019-20	2020-21	2021-22
GDP at current prices (in crore)	1,70,90,042	1,88,99,668	2,00,74,856	1,98,00,914	2,36,64,637
Growth Rate of GDP over previous year (in *%*)	11.03	10.58	6.21	-1.36	19.51
GSDP at current prices (in crore)	2,82,266	3,27,693	3,44,571[P]	3,52,161[Q]	4,00,061[A]
Growth Rate of GSDP over previous year (in *per cent*)	7.41	16.09	5.15	2.20	13.60

Trends in annual growth of Chhattisgarh's GSDP (current prices) vis-à-vis GDP of the country are given in Table 18. From 2017-18 to 2021-22, the GSDP further increased from ₹2,82,266 crore to ₹4,00,061 crore. The growth rate peaked at 16.09% in 2018-19 and saw a low of 2.20% in 2020-21 due to the COVID-19 pandemic. A strong recovery was noted in 2021-22 with a growth rate of 13.60%, driven by significant contributions from agriculture, industry, and services sectors. As can be seen from the table above, the growth rate of GSDP of Chhattisgarh oscillated between 2.20 and 16.09 % during the five-year period 2017-18 to 2021-22. Even though the GSDP of Chhattisgarh grew at a lower rate during 2021-22 compared to the GDP of India, it registered a higher growth rate compared to the previous year mainly due to increase in growth rate of all three Sectors that make up the GSDP - Agriculture, Industry and Services sectors, from 7.48 percent, (-) 0.16 % and 2.91 % in 2020-21 to 8.93 %, 17.27 % and 11.29 % in 2021-22 respectively.

Odisha's fiscal performance remained satisfactory during 2021-22 and the trend is expected to persist in 2022-23. The State has consistently reported a revenue surplus and has maintained a gross fiscal deficit within FRBM limits. Debt to GSDP ratio in the State has been maintained below the threshold limit of 25 % consistently over the last 15 years. The capital outlay of the state in 2022-23(BE) is almost 8.6 times its value in 2011-12 and is 5.1 % of GSDP. The transformative shift from Agriculture to Industry and service sector has been quite visible with the shares of Industries and Services sector in GSDP expected to increase to 41.3 % and 36.2 % respectively. Government's proactive initiatives in the industry sector, like "Make in

Odisha Conclave", "Industrial Policy 2022", "Odisha Apparel and Textile Policy", "Odisha Logistic Policy 2022" and "Export Promotion Policy 2022" is expected to give a fillip to development of a robust industrial ecosystem in Odisha.

5.4.3.1. Trends in Per Capita Gross State Domestic Product

Per Capita GSDP is a critical indicator of the economic well-being of the state's population. Over the period from 2017-18 to 2021-22, Chhattisgarh's per capita GSDP has witnessed a steady increase, reflecting overall economic growth. This growth trajectory, however, has shown variability, mirroring the trends in overall GSDP. The per capita GSDP increased significantly, indicating an improvement in the average economic output per person. This rise suggests better economic conditions, although the state's per capita GSDP remains lower than the national average, highlighting the need for continued economic development and equitable distribution of resources.

The per capita GSDP in Odisha has shown a steady and significant increase over the past decade. This indicates consistent economic growth and improved economic conditions for the population in the state. The per capita GSDP data for Odisha from 2010 to 2020 demonstrates a strong and continuous economic growth trend, indicating improved economic prosperity and development in the state. The stable and positive growth rates each year reflect effective economic policies and development initiatives. Consistent The per capita GSDP has increased from INR 56,945 in 2010 to INR 1,33,517 in 2020. The highest year-on-year growth rate was observed in 2013 at 10.04% (Figure 38). The annual growth rates have remained relatively stable, averaging around 8-9% each year. The compound annual growth rate (CAGR) for this period is 8.90%, reflecting robust economic growth (Table 19).

Table 19. Per Capita GSDP of Odisha from 2010 to 2020

Year	Per Capita GSDP (in INR)	YoY Growth Rate (%)
2010	56945.00	
2011	61032.00	7.18
2012	66282.00	8.6
2013	72937.00	10.04
2014	79856.00	9.49
2015	87019.00	8.97
2016	94700.00	8.83
2017	103256.00	9.03
2018	112354.00	8.81
2019	122140.00	8.71
2020	133517.00	9.31

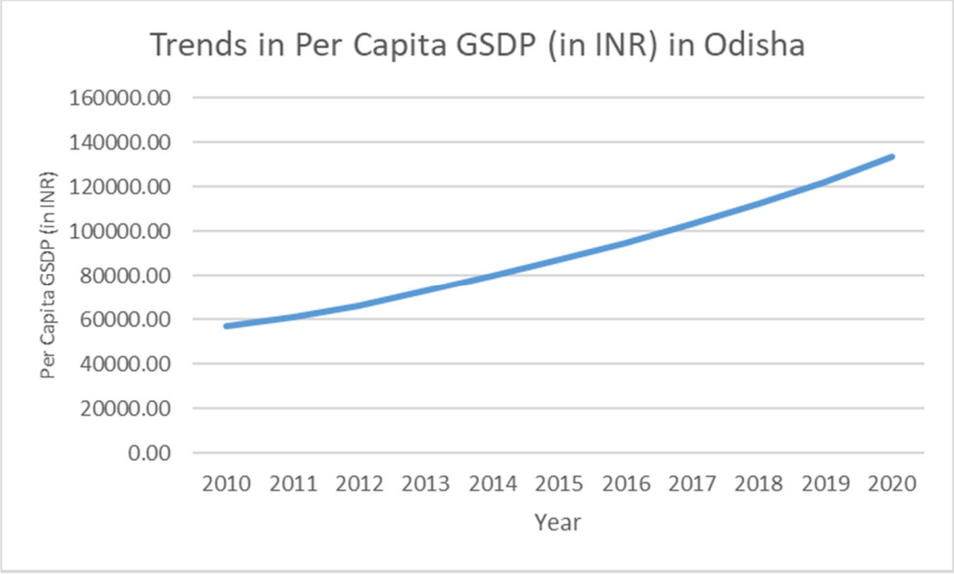


Figure 38. Trend in Per Capita GSDP from 2010 to 2020

5.4.3.2. Trends in Per Capita Income

The per capita income of Chhattisgarh has been on an upward trajectory over the years, although it remains below the national average. In the fiscal year 2021-22, the per capita income was estimated at ₹1,18,401, compared to the national average of ₹1,50,007. This represents a significant increase from ₹58,547 at current prices in 2013-14 and ₹28,373 at constant prices (2004-05 base year). The growth in per capita income reflects the overall economic progress in the state, driven by various sectors including agriculture, industry, and services. However, the lower per capita income relative to the national average indicates persistent income disparities and the need for focused economic policies to enhance living standards and reduce poverty.

Odisha has successively reduced its gap with India's per-capita income as shown in Table 20. In 2015-16, Odisha's per-capita income was 32 percent lower than India's per-capita income. Within 7 years, the gap is reduced to 11.7 percent in 2022-23. Odisha's per-capita income has grown at CAGR of 10.9 percent while India's per-capita income grew at a CAGR of 9.4 percent in nominal terms since 2011-12.

Table 20. Per Capita GSDP of India & Odisha from 2010 to 2020

Year	Per-capita income (INR)		Gap (in %)
	Odisha	India	
2015-16	64,835	94,797	31.6
2016-17	77,507	103,870	25.4
2017-18	87,055	115,224	24.4
2018-19	98,005	125,946	22.2
2019-20 (3rd RE)	104,741	132,115	20.7
2020-21 (2nd RE)	102,166	126,855	19.5
2021-22 (1st RE)	128,873	150,007	14.1
2022-23 (A)	150,676	170,620	11.7

5.4.3.3. Sectorial Composition of GSDP

The sectoral composition of Chhattisgarh's GSDP is presented in Figure 39 below and highlights the diverse economic structure of the state. Economic activities are generally divided into Primary, Secondary and Tertiary sectors, which correspond to Agriculture, Industry, and Services Sectors. Change in sectoral contribution of the GSDP is also important to understand the changing structure of economy. Figure below shows the sectoral composition of GSDP of Chhattisgarh vis-à-vis GDP of India during 2021-22. Agriculture sector includes Agriculture, Forestry and Fishing. Industry sector includes Mining & Quarrying, Manufacturing, and Construction etc.

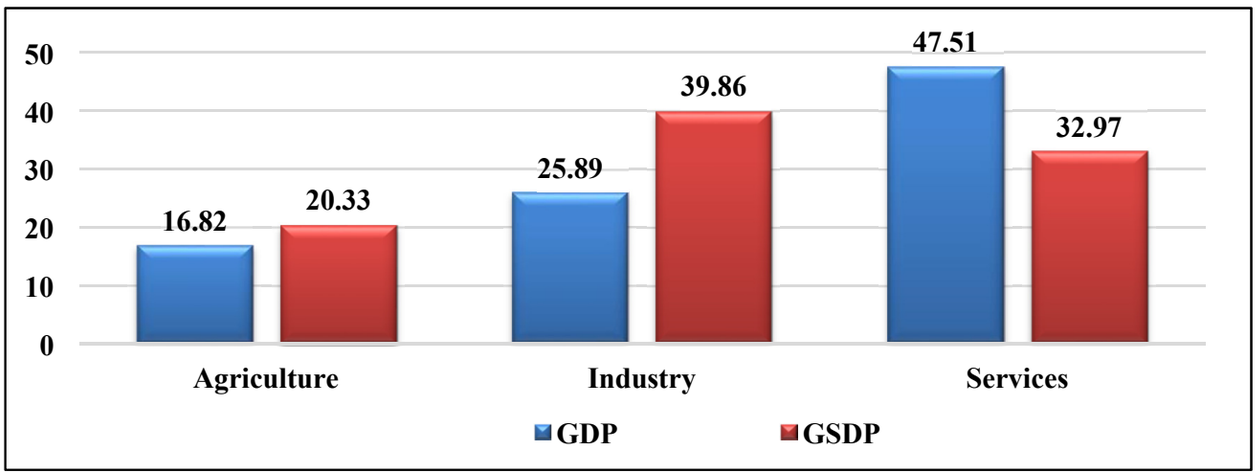


Figure 39. Composition of GSDP of Chhattisgarh vis-à-vis GDP of India during 2021.

In 2021-22, the industrial sector was the largest contributor, accounting for 39.86% of the GSDP, followed by the services sector at 32.97%, and agriculture at 20.33%. Over the five-year period from 2017-18 to 2021-22, the share of the agriculture sector increased from 16.82% to 20.33%, indicating a strengthening of primary sector activities (Figure 39). Meanwhile, the relative share of industry slightly decreased, and the services sector also saw a minor decline. This shift reflects structural changes within the state's economy, emphasizing the growing importance of agriculture alongside traditional industrial activities.

The sectoral composition of the Gross State Domestic Product (GSDP) in Odisha can be categorized into three main sectors: Agriculture, Industry, and Services.

Table 21. Sectoral composition of GSDP in Odisha from 2010 to 2020

Sector	Contribution to GSDP (%)
Agriculture	17.5
Industry	35.7
Services	46.8

These sectors are further divided into various sub-sectors.

a) Agriculture and Allied Sector: This sector includes agriculture, livestock, forestry, and fishing.

Table 22. Sectorial Composition of Agriculture and Allied Sector

Sub-Sector	Contribution to GSDP (%)
Agriculture	10.5
Livestock	2.0
Forestry	1.8
Fishing	3.2

b) Industry Sector: This sector includes mining, manufacturing, electricity, gas & water supply, and construction.

Table 23. Sectorial Composition of Industry Sub-Sectors

Sub-Sector	Contribution to GSDP (%)
Mining and Quarrying	10.1
Manufacturing	14.2
Electricity, Gas & Water	2.5
Construction	8.9

c) Services Sector: This sector includes trade, hotels, transport, communications, financial services, real estate, and other services.

Table 24. Sectorial Composition of Service Sectors

Sub-Sector	Contribution to GSDP (%)
Trade, Hotels, Transport & Communications	18.3
Financial Services	7.4
Real Estate, Ownership of Dwellings & Professional Services	12.6
Public Administration and Defense	7.8
Other Services	9.7

5.4.3.4. Occupational Structure

Chhattisgarh's occupational structure varies significantly between rural and urban areas, reflecting the economic diversity within the state. The State is predominantly rural, with 80% of its total population living in rural areas. In rural areas, a large portion of the population is engaged in agriculture and allied activities, making it a primary source of livelihood. This is consistent with the higher contribution of the agriculture sector to the state's GSDP. In contrast, urban areas have a more diversified occupational structure, with significant employment in industry and services sectors. The urban economy is driven by manufacturing, trade, transportation, and public administration.

Chhattisgarh's occupational patterns are shaped by the distinctive characteristics of its three broad regions: northern Chhattisgarh, the central plains, and southern Chhattisgarh. In the north, districts like Korea and Surguja rely heavily on forests for resources and practice

traditional agriculture, with paddy as the main crop. The central plains, including Durg and Raipur, are more industrialized and agriculturally advanced, featuring double cropping and horticulture. Southern Chhattisgarh, with areas like Bastar, focuses on forest-based livelihoods and traditional farming. Urban centres in the plains offer diverse job opportunities, contrasting with the rural reliance on agriculture and forest resources.

Table 25. Workers in Chhattisgarh (percentage of total workers)
(Source: Income and Livelihoods Chhattisgarh:
https://www.im4change.org/docs/chhat_chap2-41-84.pdf)

Workers as per occupation	Region			
	Northern region	Central plains	Southern region	Total
Farmers	72.53	79.64	81.49	78.01
Shopkeepers	3.06	3.63	0.39	3.10
Wage labour	24.26	16.58	17.99	18.74
Skilled workers	0.15	0.15	0.13	0.15
State	26.05	62.18	11.77	100.00

The Village Jan Rapats data (Table 25) indicates that 18.74% of households in Chhattisgarh depend on wage labour, with around 3% running shops. Many agriculturists, especially during lean seasons, turn to wage labour, including agricultural work, forest produce collection, and other jobs like construction and mining. Only 0.15% of rural households consist of skilled workers, mainly artisans. Regionally, farmers are predominant, making up 78.01% of workers, while shopkeepers and wage labourers constitute smaller proportions. The central plains have the highest percentage of farmers, while the northern and southern regions have more wage labourers.

To understand the occupational structure in rural and urban of Odisha, we need to analyze data from various sectors, such as agriculture, industry, and services, and see how employment is distributed among these sectors.

The rural Odisha is predominantly agrarian with most of the population engaged in agriculture and allied activities with limited presence of industrial and service sectors (Table 26). Whereas urban Odisha, is more diversified with significant employment in industry and services with lesser dependence on agriculture compared to rural areas.

Table 26. Occupational Composition in Different Working Sectors (Rural & Urban)

Sector	Percentage of Workforce (Urban)	Percentage of Workforce (Rural)
Agriculture	10%	70%
Industry	40%	15%
Services	50%	15%

Table 27. District-wise Male and Female Working Population (Odisha)

Sl. No	District	Cultivators			Agricultural Labourers		
		Male	Female	Total	Male	Female	Total
1	Bargarh	168361	48052	216413	171697	188953	360650
2	Jharsuguda	32601	8266	40867	26764	30045	56809
3	Sambalpur	68750	18050	86800	80897	79901	160798
4	Deogarh	29741	12919	42660	36645	45845	82490
5	Sundergarh	141620	42653	184273	105394	147933	253327
6	Keonjhar	165481	32563	198044	132616	177459	310075
7	Mayurbhanj	193272	45500	238772	258199	310556	568755
8	Balasore	242526	46292	288818	219539	138675	358214
9	Bhadrak	147144	8812	155956	130155	21222	151377
10	Kendrapara	135373	13891	149264	115133	28731	143864
11	Jagatsinghpur	99191	12129	111320	81893	28430	110323
12	Cuttack	127798	10900	138698	187687	60611	248298
13	Jajpur	113938	6943	120881	160614	25407	186021
14	Dhenkanal	65823	5407	71230	108843	54793	163636
15	Angul	82199	25408	107607	89252	83162	172414
16	Nayagarh	76425	6597	83022	95682	24447	120129
17	Khordha	85550	7112	92662	89834	26440	116274
18	Puri	157818	14943	172761	117471	46471	163942
19	Ganjam	230581	54362	284943	251465	313983	565448
20	Gajapati	46096	18966	65062	61649	91550	153199
21	Kandhamal	56998	22223	79221	66788	96144	162932
22	Boudh	50213	13444	63657	41343	63342	104685
23	Subernapur	62584	11421	74005	67472	71941	139413
24	Bolangir	140282	26283	166565	160697	165719	326416
25	Nuapada	70074	24618	94692	54653	95181	149834
26	Kalahandi	119007	25984	144991	204594	232139	436733
27	Rayagada	72596	26669	99265	101221	146954	248175
28	Nabarangpur	143379	29707	173086	125325	203458	328783
29	Koraput	143536	63658	207194	106583	184043	290626
30	Malkangiri	106393	44867	151260	31731	74622	106353

(a)

Sl. No	District	Household Industry			Other workers		
		Male	Female	Total	Male	Female	Total
1	Bargarh	27643	20502	48145	105604	31280	136884
2	Jharsuguda	5902	9934	15836	106751	27444	134195
3	Sambalpur	13886	45402	59288	149628	49326	198954
4	Deogarh	3805	4282	8087	22193	10005	32198
5	Sundergarh	18007	8963	26970	319666	88991	408657
6	Keonjhar	12288	9026	21314	187692	49389	237081
7	Mayurbhanj	35642	78166	113808	210669	91530	302199
8	Balasore	18624	10112	28736	203331	53608	256939
9	Bhadrak	10907	3544	14451	121353	25462	146815
10	Kendrapara	11391	5153	16544	124485	32733	157218
11	Jagatsinghpur	12009	4348	16357	132496	33153	165649
12	Cuttack	37905	13904	51809	408486	89074	497560
13	Jajpur	17594	3344	20938	193945	30449	224394
14	Dhenkanal	12638	4674	17312	153248	30107	183355
15	Angul	20142	14927	35069	169354	42076	211430
16	Nayagarh	11275	6282	17557	101209	21716	122925
17	Khordha	29930	9541	39471	440566	103220	543786
18	Puri	16973	8142	25115	206199	53659	259858
19	Ganjam	41774	14500	56274	466207	128900	595107
20	Gajapati	2841	2529	5370	45321	24981	70302
21	Kandhamal	4200	7746	11946	65529	35721	101250
22	Boudh	6498	5176	11674	27573	11868	39441
23	Subernapur	11030	7726	18756	40509	13978	54487
24	Bolangir	17798	10852	28650	151179	47791	198970
25	Nuapada	4742	3899	8641	38686	13585	52271
26	Kalahandi	10756	7697	18453	112933	38820	151753
27	Rayagada	5493	4466	9959	78722	31001	109723
28	Nabarangpur	7818	6591	14409	66119	28509	94628
29	Koraput	7879	6537	14416	126055	55115	181170
30	Malkangiri	1825	5900	7725	30546	14782	45328

(b)

5.5. Map showing Boundaries of Notified and Non-notified Slums

In the urban areas of the Mahanadi River Basin, a growing number of notified and non-notified slums have emerged due to rapid urbanization. Notified slums are recognized by the government and eligible for basic services like water supply, sanitation, and housing, while non-notified slums often lack formal recognition and access to these facilities.

Table 28. Departments/ Organizations Contacted for receiving the relevant data

S. No.	Name of the Department/ Organization	Status/ Response
1.	Chhattisgarh Council of Science & Technology (CGCOST)	Concerned agencies/ organizations identified and application processed for data further but didn't received any data till date.
2.	Department of Urban Administration & Development	
3.	Revenue & Disaster Management Department	
4.	Chhattisgarh Infotech Promotion Society (CHiPS)	
5.	State Urban Development Agency (SUDA)	

6. Future Projections and Scenarios

Population projection is a scientific attempt to peep into the future population scenario, conditioned by certain assumptions using past data. Assumptions used and their holding true in future, is a critical condition in this exercise. Predicting the future course of human fertility and mortality is not easy, as medical and health interventions, production of food and its equitable availability, climatic variability, socio-cultural setting, politico-economic conditions and a host of other factors influence population dynamics, making it difficult to predict population with certainty.

The Cohort Component Method is the universally accepted method of making population projections because growth of population is determined by fertility, mortality and migration rates. Figure 35 shows the projected population of the Chhattisgarh State.

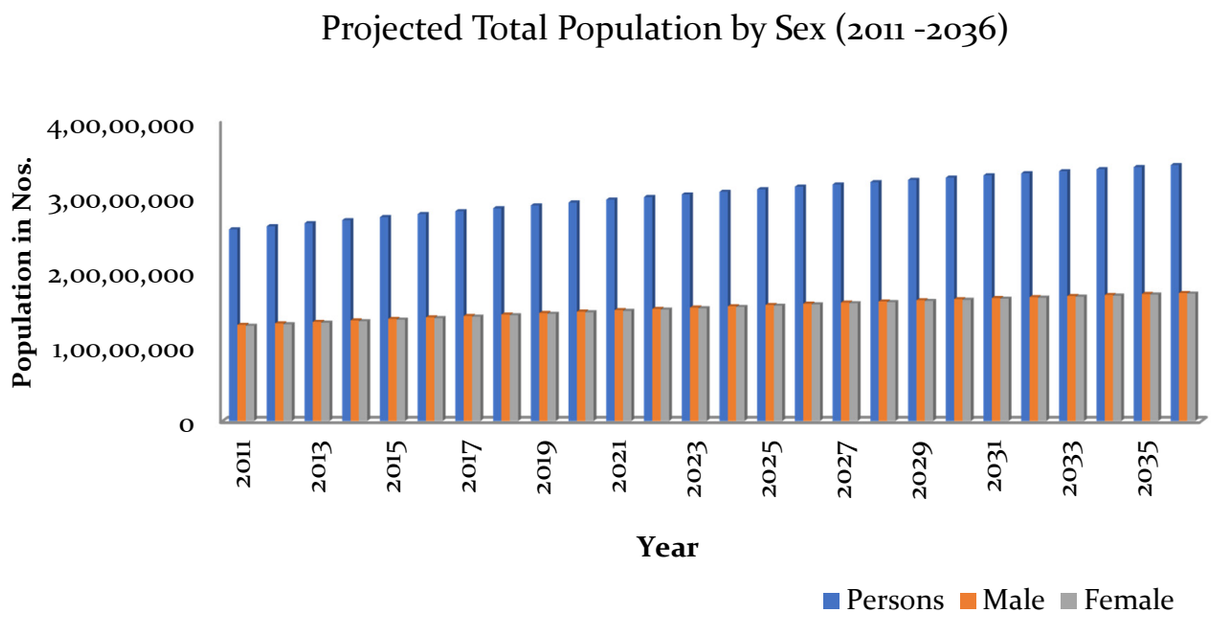


Figure 40. Projected total population by sex in Chhattisgarh state (2011-2036)

Odisha, a state in eastern India, has a population projected to reach around 50 million by 2036. The state's population growth rate has been declining, with urbanization contributing to this trend. The age demographic is also changing, with a growing proportion of the elderly due to declining fertility rates and increasing life expectancy. These demographic changes present both challenges and opportunities for the state's economic development and social infrastructure planning. Effective policies will be crucial in addressing these evolving population dynamics (Table 29).

Table 29. Projection of population (Total, Rural & Urban) from 2011 to 2036

Projection of Population (*1000) in Odisha									
Year	TOTAL			RURAL			URBAN		
	Persons	Male	Female	Person	Male	Female	Person	Male	Female
2011	41,974	21,212	20,762	34,970	17,587	17,383	7,004	3,625	3,379
2012	42,373	21,406	20,967	35,228	17,708	17,520	7,145	3,698	3,447
2013	42,771	21,599	21,172	35,483	17,827	17,656	7,288	3,772	3,516
2014	43,170	21,793	21,377	35,738	17,946	17,792	7,432	3,847	3,585
2015	43,568	21,986	21,582	35,990	18,064	17,926	7,578	3,922	3,656
2016	43,966	22,179	21,787	36,241	18,181	18,060	7,725	3,998	3,727
2017	44,312	22,344	21,968	36,447	18,273	18,174	7,865	4,071	3,794
2018	44,658	22,509	22,149	36,652	18,365	18,287	8,006	4,144	3,862
2019	45,004	22,673	22,331	36,855	18,455	18,400	8,149	4,218	3,931
2020	45,350	22,838	22,512	37,057	18,546	18,511	8,293	4,292	4,001
2021	**45,696**	**23,003**	**22,693**	**37,257**	**18,635**	**18,622**	**8,439**	**4,368**	**4,071**
2022	45,987	23,141	22,846	37,411	18,702	18,709	8,576	4,439	4,137
2023	46,276	23,278	22,998	37,562	18,768	18,794	8,714	4,510	4,204
2024	46,566	23,416	23,150	37,713	18,834	18,879	8,853	4,582	4,271
2025	46,857	23,554	23,303	37,863	18,899	18,964	8,994	4,655	4,339
2026	**47,147**	**23,692**	**23,455**	**38,010**	**18,963**	**19,047**	**9,137**	**4,729**	**4,408**
2027	47,369	23,794	23,575	38,101	18,997	19,104	9,268	4,797	4,471
2028	47,592	23,897	23,695	38,192	19,032	19,160	9,400	4,865	4,535
2029	47,814	23,999	23,815	38,281	19,065	19,216	9,533	4,934	4,599
2030	48,037	24,102	23,935	38,369	19,098	19,271	9,668	5,004	4,664
2031	**48,259**	**24,204**	**24,055**	**38,455**	**19,129**	**19,326**	**9,804**	**5,075**	**4,729**
2032	48,413	24,272	24,141	38,485	19,133	19,352	9,928	5,139	4,789
2033	48,566	24,339	24,227	38,513	19,136	19,377	10,053	5,203	4,850
2034	48,719	24,407	24,312	38,540	19,138	19,402	10,179	5,269	4,910
2035	48,873	24,475	24,398	38,567	19,141	19,426	10,306	5,334	4,972
2036	**49,025**	**24,542**	**24,483**	**38,591**	**19,141**	**19,450**	**10,434**	**5,401**	**5,033**

7. Findings and Summary

- Overall population in Chhattisgarh& Odisha state for year 1901 is 4.18 million& 36.8 million respectively which has now risen to 25.55 million&41.97 million respectively in 2011.
- In the Mahanadi basin of the Chhattisgarh and Odisha region more than 75% of population lives in the rural areas.
- Major change has been observed in Kabirdham district in the Chhattisgarh state as the decadal analysis shows a hike from 13.84% in the year 1991-2001 to 40.71% &in the year 2001-2011.
- Between 2001 and 2011, the decadal increase in population for the Chhattisgarh and Odisha regions is 2.42%.
- The total number of households (HHs) in the Chhattisgarh region is about 4,871,507and in Odisha region, it is 3,921,526.
- The population density in the Chhattisgarh region is 241 persons per square km and in Odisha region it is270 persons per square km. States shows vast rural expanses and relatively low urbanization compared to more densely populated states in India.
- Literacy in Chhattisgarh and Odisha has seen significant improvements, having overall literacy rate 70.28% and 72.9% respectively.
- In Chhattisgarh, the sex ratio is 991 and in Odisha its 979 which is slightly lower than the overall sex ratio.
- The total number of workers in Chhattisgarh & Odisha is 12.1 million & 17.5 million respectively.
- Projections indicate that the population will steadily increase, though at a slower rate compared to previous decades due to declining fertility rates. By 2026, the population of Chhattisgarh is projected to reach 31.2 million and Odisha to 45 million.

8. Recommendations

Here are some recommendations based on the outcomes of a basin demographic analysis:

1. **Sustainable Water Management**: Implement water-saving techniques and infrastructure improvements to ensure the sustainable use of water resources in response to growing population demands.
2. **Urban Planning**: Develop and enforce land-use policies that guide urban expansion in a way that minimizes environmental impact and ensures equitable access to resources.
3. **Disaster Preparedness**: Establish early warning systems and community-based disaster preparedness plans to mitigate the risks of floods and droughts.
4. **Infrastructure Development**: Invest in infrastructure improvements, such as better sewage and waste management systems, to accommodate the growing population and reduce environmental degradation.
5. **Conservation Initiatives**: Launch conservation programs aimed at protecting critical ecosystems and biodiversity hotspots within the basin.
6. **Economic Diversification**: Promote economic diversification to reduce over-reliance on natural resources and create sustainable livelihoods for the basin's population.
7. **Health and Education Access**: Improve access to healthcare and education services to enhance the overall well-being and resilience of the population.
8. **Community Engagement**: Engage local communities in planning and decision-making processes to ensure that policies and interventions are culturally appropriate and widely supported.
9. **Climate Adaptation**: Develop and implement climate adaptation strategies to address the impacts of climate change on the basin’s population and resources.
10. **Regular Monitoring**: Establish a continuous monitoring and evaluation system to track demographic and environmental changes, allowing for timely policy adjustments.

Acknowledgement

The Centre for Mahanadi River Basin Management and Studies (cMahanadi), NIT Raipur and NIT Rourkela expresses its sincere gratitude to the following agencies and institutions for their invaluable support and contributions in the preparation of the "Basin Demography" report for the Mahanadi Basin:

We extend our thanks to the following agencies for providing data and support in the preparation of the report –

1) Directorate of Economics and Statistics, Government of Chhattisgarh
2) Chhattisgarh Council of Science & Technology (CCOST)
3) Urban Administration and Development, Government of Chhattisgarh
4) Census 2011, Ministry of Rural Development
5) Integrated Water Resources Information System (IWRIS)
6) Central Water Commission, Government of India
7) Indian Meteorological Department (IMD)
8) Alaska Satellite Facility (ASF), Japanese Space Agency
9) Environmental Systems Research Institute (ESRI), India
10) Chhattisgarh Tourism Board, Government of Chhattisgarh
11) Department of Tourism - Government of Odisha
12) Chhattisgarh Water Resource Department, Government of Chhattisgarh
13) Department of Water Resources, Government of Odisha
14) Department of Housing and Environment, Government of Chhattisgarh
15) Odisha Unorganized Worker's Social Security Board.
16) CEIC Data.
17) Department of Health & Family Welfare, Odisha
18) Planning & Convergence Department, Odisha
19) Panchayati raj and Drinking Water Department, Government of Odisha

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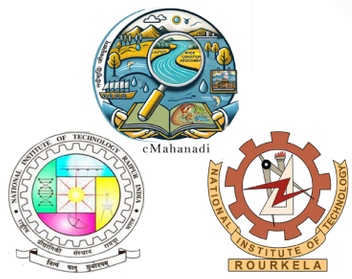

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