

GAZETTEER OF KARNAL



Revenue and Disaster Management Department, Haryana
CHANDIGARH (INDIA)
2016

HARYANA DISTRICT GAZETTEERS



KARNAL



**Jindal School of
Liberal Arts & Humanities**
India's First Transnational Humanities School

Prepared by
Jindal School of Liberal Arts & Humanities
O. P. Jindal Global University

for the
Government of Haryana

BACKGROUND

The first Gazetteer of Karnal was published in 1892, followed by 1918 (some people consider Ibbetson's Report in 1883 itself to be the first Gazetteer-type text). After that, the next one appeared in independent India, in 1976. This current one would then be, its fourth edition. Karnal was a very important British town, yet, it has surprisingly attracted very little research and visibility in popular perception and deeper understanding of an evolving town. Given this backdrop, this Gazetteer assumes an important role in policy making and knowledge inventory for future.

The idea of a Gazetteer is a living document of memory, of storytelling, of governance, of interventions, of highs and lows, of wins and losses. It dissects into the soul of the region. It offers a unique lens to see one's society, and generates a discourse on institutions and history. It amalgamates human emotions and physical infrastructure.

We have tried to adhere to the core philosophy of a Gazetteer. Peeping into the soul of a city is not an easy task to begin with. But once you're in it, you're totally in. The overwhelming power through which a city subsumes you within itself makes it very difficult to view it from outside. This was done through a group of highly committed scholars and students who lived and breathed the city. Collecting information from various government departments, coupled with extensive research through secondary sources led to populating raw data and information, to help distill the city as a living monument of memory and culture.

Four innovations have been introduced in this Gazetteer. *Firstly*, Geographic Information System (GIS) has been used extensively to lend the reader a geographic imagination of the city. *Secondly*, instead of printing a variety of tables, which spell out numbers difficult to be comprehended, graphs as a medium of conveying the same information has been relied upon. Graphs not only show trends over time and relative strengths of the variables, but also offer a far more meaningful representation of a piece of data. *Thirdly*, extensive usage of photographs has helped freeze moments in time and the exercise has helped build thoughts and expressions impossible through words and data. *Fourthly*, while the aim of the Gazetteer has been to offer a descriptive commentary of the city, the experts have taken some liberty to spell out visible policy directions that are emanating from their analysis.

The Gazetteer is divided into eighteen chapters, each focusing on a distinct idea that assumes irreplaceable importance. The methodology was divided into three broad frames of study. *First* frame was that of secondary research, requiring a dive into historical information published in various government records, including British archives. The *second* frame was to engage with people of Karnal, locating fossilized history in their folklores, ideas of the city embedded in their conversations, and their own views and illustrations of what the city is and how its contours are shaped. The *third* frame analyzed information and data supplied by various government departments. This includes engaging with district administration to capture the Vision 2030 for Karnal, spelled out in the last chapter.

This document offers a snapshot of the entire Gazetteer, detailing the contents and summaries.

TABLE OF CONTENTS |||

Chapter 1:	Introduction
Chapter 2:	Mahabharata, Myths and Archaeology
Chapter 3:	Political History
Chapter 4:	Social History
Chapter 5:	Birth of New Karnal in 1947
Chapter 6:	Stories and Folklores of Karnal
Chapter 7:	Urban Development
Chapter 8:	Migration
Chapter 9:	Slums
Chapter 10:	Agriculture and Irrigation
Chapter 11:	Industries
Chapter 12:	Labor
Chapter 13:	Banking and Finance
Chapter 14:	Public Health
Chapter 15:	Education
Chapter 16:	Police and Judiciary
Chapter 17:	Political Participation and Governance
Chapter 18:	Environment
Chapter 19:	Conclusion

DETAILED TABLE OF CONTENTS

- 1. Introduction**
 - 1.1 Gazetteers and Governance: History and Relevance
 - 1.2 Karnal through Gazetteers
 - 1.3 Structure of this Gazetteer
 - 1.4 Methodology
 - 1.5 Karnal at a Glance
 - 1.6 Limitations
 - 1.7 Conclusion

- 2. Mahabharata and Karnal**
 - 2.1 Introduction
 - 2.2 Evidence for Indus Valley Civilization
 - 2.2.1 Terracotta Objects
 - 2.3 Early Hindu History of Karnal
 - 2.3.1 Holy Tanks
 - 2.3.2 Mahabharata Period
 - 2.3.3 Temple Architecture
 - 2.3.4 Sculptures from the Hindu Period
 - 2.4 Buddhist Period
 - 2.5 Medieval Period
 - 2.6 The Rise of the Sikhs
 - 2.7 Conclusion

- 3. Political History**
 - 3.1 The Dry Land
 - 3.2 Canal as the Lifeline
 - 3.3 Political History
 - 3.3.1 Ancient Karnal
 - 3.3.2 Medieval Karnal
 - 3.3.3 History under the Mughals
 - 3.3.4 Decline of the Mughals
 - 3.3.5 Modern Period
 - 3.4 First War of Independence 1857
 - 3.5 Freedom Struggle
 - 3.5.1 Freedom Fighters for Karnal
 - 3.5.2 Liaquat Ali Khan- first Prime Minister of Karnal
 - 3.6 Administrative History
 - 3.7 Religious Communities
 - 3.8 Conclusion

- 4. Social History**
 - 4.1 Tribal Organization of People
 - 4.1.1 General
 - 4.1.2 Hindu *Tagas*
 - 4.1.3 Rajputs
 - 4.1.4 Gujars
 - 4.1.5 Afghans
 - 4.1.6 Brahmins
 - 4.1.7 Jats
 - 4.1.8 Rors
 - 4.1.9 Other Miscellaneous Castes/Tribes
 - 4.2 The local organization of the tribe

- 4.3 The Village Community
 - 4.3.1 The Propriety Body- Headmen and their duties
 - 4.3.2 Property Rights
- 4.4 Status of Women
- 4.5 Social Life of the village community
 - 4.5.1 Homesteads and Village Architecture
 - 4.5.2 Everyday Chores
 - 4.5.3 Birth, Death and Wedding Rituals
- 4.6 Education
- 4.7 Conclusion

- 5. Birth of a new Karnal in 1947**
 - 5.1 Introduction
 - 5.2 Methodology
 - 5.3 What was Karnal from 19th Century until 1947
 - 5.3.1 Territory
 - 5.3.2 Population/Demographics before Partition
 - 5.3.3 Religion
 - 5.4 Transformation in Karnal in 1947
 - 5.4.1 Demographic Transformation
 - 5.4.2 Changes in the Political Economy of the District
 - 5.5 Conclusion

- 6. Stories and Folklores of Karnal**
 - 6.1 Introductory Note
 - 6.2 Stories
 - 6.2.1 Ghar ki Chaoudhary Kike Hath
 - 6.2.2 Prelude to Mahabharata
 - 6.2.3 The fearsome Tapkuā
 - 6.2.4 Legends of Qalandar Sāhib
 - 6.2.5 Pandit Lakhmi Chand-Shakespeare of Haryana
 - 6.2.6 Legend of Pakku Pul-Panch Pir
 - 6.2.7 Cleverly Yours, Hyenas
 - 6.2.8 Monkey Heart
 - 6.2.9 Legends of Sita Mai Village
 - 6.2.10 Raja Karan & Karnal
 - 6.2.11 Legends of Baba Meera Sahib, Meera Ghati Chowk
 - 6.3 Verse and One Liners

- 7. Urban Development**
 - 7.1 Karnal
 - 7.1.1 Urbanization Trends
 - 7.1.2 The Town's Spatial History
 - 7.1.3 The Town's Economy
 - 7.1.4 Role of State Institutions
 - 7.1.4.1 Municipal Corporation, Karnal
 - 7.1.4.2 Haryana Urban Development Authority
 - 7.1.4.3 Haryana Industrial Development Corporation
 - 7.1.4.4 Haryana Urban Infrastructure
 - 7.2 Nilokheri
 - 7.2.1 History, Demography and Economy
 - 7.2.2 Town Administration
 - 7.3 Taraori
 - 7.3.1 History, Demography and Economy
 - 7.3.2 Urban Development
 - 7.3.3 Town Infrastructure

- 7.4 Gharaunda
 - 7.4.1 History, Demography and Economy
 - 7.4.2 Town Administration
 - 7.4.3 Urban Development
- 7.5 Indri
 - 7.5.1 History, Demography and Economy
 - 7.5.2 Town Administration
 - 7.5.3 Urban Development
- 7.6 Assandh
 - 7.6.1 History, Demography and Economy
 - 7.6.2 Urban Development
- 7.7 Nissing
 - 7.7.1 History, Demography and Economy
 - 7.7.2 Town Economy
- 7.8 Conclusion: People's Aspirations
- 8. Migration**
 - 8.1 Myths and Histories of Migration
 - 8.2 Demographic Outline
 - 8.3 Patterns of Migration in Karnal
 - 8.4 Conclusion
- 9. Slums**
 - 9.1 General Information: Slums in India and Karnal
 - 9.2 Location and Maps
 - 9.3 Caste and Identity
 - 9.4 Poverty Levels
 - 9.5 Livelihood
 - 9.5.1 Informal Economy
 - 9.5.2 Deha Basti, Shiv Colony- Caste: Deha (SC)
 - 9.6 Health and Education- Importance of Aganwadi
 - 9.7 Government Creche
 - 9.8 Health Centers
 - 9.9 Education
 - 9.10 Security and Justice
 - 9.11 Conclusion
- 10. Agriculture and Irrigation**
 - 10.1 Agricultural History of Karnal
 - 10.2 Food grain Production in Karnal
 - 10.3 Common Agricultural Pests and Diseases
 - 10.4 Rice-Wheat Cropping Systems: Issues about Sustainable Agricultural Practices
 - 10.4.1 Green Revolution and Rise of Rice-Wheat Cropping System
 - 10.4.2 Environmental Impacts of RWCS
 - 10.5 Irrigation
 - 10.5.1 Western Yamuna Canal (WYC)
 - 10.5.2 Major Irrigational Trends in Karnal
 - 10.6 Agricultural Institutes in Karnal: Centers for Excellence
 - 10.6.1 National Dairy Research Institute (NDRI)
 - 10.6.2 Central Soil Salinity Research Institute
 - 10.6.3 Indian Agricultural Research Institute (IARI)
 - 10.6.4 Sugarcane Breeding Institute (SBI)
 - 10.6.5 Center of Excellence for Vegetables
 - 10.6.6 Indian Institute of Wheat and Barely Research
 - 10.7 Conclusion

11. Industries

- 11.1 Brief History
- 11.2 Industrial Landscape Today
- 11.3 Industrial Clusters in Kārnal
 - 11.3.1 Rice Mills Clusters
 - 11.3.2 Agricultural Implements
 - 11.3.3 Paints and Chemicals
 - 11.3.4 Pharmaceuticals
 - 11.3.5 Print and Packaging
- 11.4 Latest Trends
- 11.5 Electricity and Vehicles
- 11.6 Karnal Food Pack Cluster
- 11.7 Conclusion

12. Labor and Informality

- 12.1 General Data
- 12.2 People and their disposition: Historical Narrative
- 12.3 Contemporary Issues in Labor Welfare
- 12.4 Institutional Performance
- 12.5 Informal Markets
 - 12.5.1 Sadar Bazaar
 - 12.5.1.1 Jawahar Market
 - 12.5.1.2 Mochi Mohalla
 - 12.5.2 Chauda Bazaar
 - 12.5.2.1 Kumharo Ki Basti Lal Kuan
- 12.6 Labor Union Dynamics
- 12.7 Conclusion

13. Banking and Finance

- 13.1 Brief History
- 13.2 Latest Scenario in the Banking Sector in Karnal
- 13.3 Priority Sector Lending of Banks: Targets Vs. Achievements
- 13.4 Spread of ATMs in Karnal District
- 13.5 Largest Public and Private Banks in Karnal
- 13.6 Microfinance
- 13.7 Conclusion

14. Public Health

- 14.1 Brief History
- 14.2 Infrastructure of Health Services in Karnal
 - 14.2.1 Civil Hospital
 - 14.2.2 Community Health Centers
 - 14.2.3 Primary Health Center
 - 14.2.4 Sub health Centers
- 14.3 Diseases Common to the District
 - 14.3.1 Vector Borne Diseases
 - 14.3.1.1 Malaria
 - 14.3.1.2 Dengue
 - 14.3.1.3 Japanese Encephalitis
 - 14.3.1.4 Tuberculosis
 - 14.3.1.5 AIDS
- 14.4 Vital Statistics & Other Programs
 - 14.4.1 Registration of Births and Deaths
 - 14.4.2 Maternal Mortality Rates (MMR)
 - 14.4.3 Female Feticide
 - 14.4.4 Beto Bachao Beti Padhao

- 14.4.5 Family Welfare Program
 - 14.4.5.1 Permanent Methods
 - 14.4.5.2 Temporary Methods
- 14.4.6 Referral Transport Scheme
 - 14.4.6.1 Free Ambulance Facility
- 14.4.7 Svasthya and Pośna Das
- 14.5 Preventive Measures to Promote Public Health/ Welfare Schemes/Social Service Schemes
 - 14.5.1 Mission Indradhanuś
 - 14.5.2 Micro Nutrient Supplements Programs
 - 14.5.3 National Immunization Programs
 - 14.5.4 Jananī Surakshā Yojanā
 - 14.5.5 ASHA (Accredited Social Health Worker)
- 14.6 Accidents
- 14.7 Conclusion and Vision

15. Education

- 15.1 Brief History
- 15.2 Education Profile in Karnal Today
 - 15.2.1 School Education
- 15.3 Higher Education
- 15.4 Vocational Education
- 15.5 Research Institutions
 - 15.5.1 Indian Institute of Wheat and Barley
 - 15.5.2 Central Soil Salinity Research Institute
 - 15.5.3 National Dairy Research Institute
 - 15.5.4 National Bureau of Animal Genetic Resources
- 15.6 Recent Government Initiatives and Future Prospects

16. Police and Judiciary

- 16.1 Police
 - 16.1.1 Structure and Organization
 - 16.1.2 Crime Trends in Karnāl
- 16.2 Prison
 - 16.2.1 Structure and Administration of Prisons
 - 16.2.2 Prison Statistics of District Jali, Karnal
 - 16.2.3 Prison Reform Programs and New Initiatives
- 16.3 Judiciary
 - 16.3.1 History of Magistracy and Courts in Karnal
 - 16.3.2 Famous Cases of Karnal
 - 16.3.3 Structure and Organization of District Court
 - 16.3.4 Judicial trends: Disposal and Pendency of Cases
 - 16.3.5 Lok Adalats
 - 16.3.6 District Legal Services Authority (DLSA)
 - 16.3.7 Mediation (*Samadhan*) Center
 - 16.3.8 New Initiatives
- 16.4 Conclusion

17. Political Participation and Governance

- 17.1 Introduction
- 17.2 Karnal Municipality
- 17.3 Panchayat Raj Institutions
 - 17.3.1 Panchayat Elections 2016
- 17.4 Lok Sabha Elections
- 17.5 Vidhan Sabha Elections
- 17.6 Political Education programs by the state in Karnal district
- 17.7 Law and Order during Elections
- 17.8 Emergency Years (1975-77)
- 17.9 Newspapers in Karnal
- 17.10 Conclusion

18. Environment: Soil and Water Resource Development

- 18.1 Topography and Geomorphology
- 18.2 Climate
- 18.3 Major Agroclimatic Divisions
- 18.4 Soils
- 18.5 River and Canal System
 - 18.5.1 Yamuna
 - 18.5.2 Saraswati
 - 18.5.3 Ghagghar
- 18.6 Hydrogeology of Karnal
- 18.7 Groundwater Resources
 - 18.7.1 Groundwater Levels-District Wide
 - 18.7.2 Groundwater Levels-Block-wise
 - 18.7.3 Groundwater Quality
 - 18.7.4 Groundwater Development
- 18.8 Flood History on Karnal District
- 18.9 Conclusion

19. Conclusion

CONTRIBUTORS

Lead Author and Project Coordinator

Yugank Goyal

Project Coordinator

Kathleen Modrowski

Project Advisor

Shiv Viswanathan

Cartography Design

Sriroop Chaudhury

Authors

Arun K. Kaushik
Anica Mann-Kapur
Anamika Srivastava
Bhuvaneswari Raman
Gunjan Sethi
Jayani J. Bonnerjee
Kathleen Modrowski
Katyayan Sharma
Malvika Seth
Mimi Roy
Mercy Deborah
Mohsin Raza Khan
Pankhuri Malhotra
Sriroop Chaudhuri
Swati Malik
Vinaykumar Paravasthu
Varun Rana
Yugank Goyal

Researchers

Ajoe Alexander
Anisha Bhattacharya
Arham Khan
Arun Singh
Cidharth Sajith
Gokul B.
Ira Mohanty
Kashika Chaddha
Katyayan Sharma
Pankhuri Malhotra
Raghav Garg
Riina
Riya Sharma
Roshni Deepta Acharya
Saurav Sanyal
Shreya Monga
Siddhant Bhasin
Utsav Sondhi

Editors

Anisha Bhattacharya
Harjot Singh
Kanika Dabra
Olivia Sebastian
Paavani Pegatraju
Roshni Deepta Acharya
Sidhant Bhasin
Simran Malhotra
Srivatsan Manivannan

Photographs and Design

Gunjan Sethi (Lead)
Arham Khan
Dhruv Sinha
Harjot Singh
Kaniz Sukaina Husain
Srivatsan Manivannan
Vinaykumar Paravastu

CHAPTER SUMMARIES

Chapter 1: Introduction

Chapter 2: Mahabharata

1. Literary evidences in the Mahabharata - the two versions of the Mahabharata, fixing the date of the battle, and mentions of important warrior communities
2. Discovering descriptions of the setting up of military camps and elaborate arrangements
3. Derivation of Karnal from the character Karna in Mahabharata, and description of his character as well as location of Karnal district in the epic
4. Locations whose names are derived from the Mahabharata - Karna Tal (Karna Lake), Dashasvamedha Tirtha
5. After-effects post the fall of the Kurus - the rise of other tribes and their histories - the settling of the Jat tribe in Haryana and Karnal, along with other tribes from various regions

Chapter 3: Political History

1. Karnal, due to its geographic location and terrain during the ancient times and its proximity to the Sultanate in the medieval times, was the epicenter of battles. The area has witnessed everything: bloody wars and mayhem, interspersed with periods of peace and quiet.
2. Karnal, was visited by many saints. One of them was the founder of Sikhism, Guru Gobind Singh in 1515. He influenced many people by his charisma and down to earth character. It was due to him, the region today has deep roots of Sikhism ingrained in its soil.
3. During ancient times, the area was a part of various empires at different times. Myriad seals, inscriptions and records found at Pehowa, Amin, Teh Polar and many other excavation sites are a testimony to this very fact.
4. Karnal, which was most likely a part of Thanesar during early medieval period, enjoyed considerable wealth and prosperity which may have attracted the Muslim invaders here, starting with Mahmud of Ghazni. The seat of power at Delhi at the time was in the hands of Prithviraj Chauhan, which was captured by the Mahmud through subsequent skirmishes around Karnal. These battles established Muslim rule in the country. In many ways, Karnal thus provided a gateway to medieval India.
5. In 1739, an epic battle between Nadir Shah and Mohammad Shah took place which changed the course of history. The battle exposed the escalating frailties of the Mughal Empire which made the empire all the more desirable. Thus, in many ways the battle and Nadir Shah put Karnal on the map, which then became a bed of freebooters and political instability.

Chapter 4: Social History

1. There are several different tribes of people present in the Karnal region today-the Hindu Tagas, the Rajputs, the Gurjars, the Afgans, the Brahmins, the Rors, Jaats, to name a few, that trace their existence to way before the colonial times.
2. The tribes back then were organized into Thapas and were strictly endogamous in nature internally but the gentes were exogamous in nature.
3. The village was divided into *pannas* and each Panna was governed by a thuladar, who was assisted by a lambardar. The headman was the *karta-dharta* of the village. The life of a common villager was one of extreme hard work since the main form of people's livelihood was agriculture.
4. The idea of common lands was the norm and the way in which we understand property in the present day and the concept of private property came with the onset of British. Women had limited interest in the property of her husband or that of her family.
5. There were specific rituals governing marriage, death and weddings like the sikka ceremony. There were different ceremonies for the birth of a son and that of a daughter.
6. Remarriage of widows was prohibited except in certain conditions, however, men were allowed to remarry. Child marriages were the norm except for the Rajput who didn't want to invest the money, in case the child died. Sati was practiced and Brahmins were of primary importance for carrying out the process.
7. In terms of education, most people at the time were illiterate except for the Brahmins of the highest ranks.

Chapter 5: Brief History of a New Karnal in 1947

1. The peace and stability that the British brought to Karnal led to a large rise in area under cultivation
2. Despite this Karnal's population changed very slowly compared to the post-independence period.
3. People's primary identities were local and face to face relying mostly on their clan or tribe rather than the all India religious and caste identities that would emerge later.

4. The religious beliefs and practices of most people were not textually based but were instead based on local shrines and sects and were eclectic in nature.
5. Karnal's demography, politics and economics completely changed in 1947. The effects of which are still being felt today.

Chapter 6: Stories and Folklores

1. Karnal has a whole goldmine of interesting stories that have trickled through time. Many of them are preludes to Mahabharata.
2. There are several layers to the legends of Qalandar Sahib.
3. Stories of *pakkapul*, Sita Mai village, Raja Karna and that of Baba Meera Sahib are fascinating indeed.
4. There are many catchy, witty and deeply thoughtful verses and one-liners capturing the soul of the city.

Chapter 7: Urbanization

1. Urbanization in the towns of Karnal is influenced by different historical forces starting from the Aryans, the Marathas, the Islamic rulers including the Mughals and the post partition history. The town people perceive their town's history with Mahabharata. The nomenclature of places, for example, *TandiSadak* for Mall Road reflects the place memory of townsmen.
2. The urban economies of Karnal are driven predominantly by agriculture and post-partition history. The boom in agriculture economy influenced the wholesale trade, particularly rice and small manufacturing cluster. The rehabilitation efforts saw the revival of leather crafts and retail trade developed in several towns.
3. The aerial images of the towns show a steady increase in the conversion of agricultural land to urban uses, especially along the GT Karnal (NH-1) road. The contemporary pattern of urbanization along the GT road is predominantly led by large developers and township projects. However, this has not necessarily erased the low rise development characteristics of Karnal towns.
4. Available information on the level of basic amenities point to disparities in the provision of services in the old town, private developments as compared to the neighborhoods developed by HUDA.
5. The local governments of Karnal's towns are predominantly the lower tiers of municipality with limited revenue mobilization capacity.
6. The perception of Karnal residents is that their town is unique as compared to other towns in the district. Traders continue to occupy the old city for business reasons although some of them have invested in both residential and commercial properties. There is also a substantial proportion of population particularly in Karnal town, who continue to stay in the old city with deficient services or move to nearby villages due to lack of affordability.

Chapter 8: Migration

1. Several myths and popular histories surrounding migration have shaped the history of Karnal.
2. Managed migration, such as in the case of Nilokheri township, has altered demographic compositions of certain areas, but also contributed to rural development projects and emergence of small towns.
3. The demography of Karnal district has two important variables- urban/rural location and gender. Most migrants have a rural location. Women make up the larger segment of migrants, mostly because of marriage.
4. Amongst the tehsils, Assandh has experienced the sharpest drop in population because of out-migration, and Karnal has the highest increase because of in-migration
5. Within the migrant population, the different categories show that the largest group (160,698 persons in 2001) is formed of intra-state migrants, and the smallest group is of inter-state migrants (110,133 persons in 2001).

Chapter 9: Slums

1. Growth and development of Karnal City slums, both long-term and recent.
2. Profile of poverty in slums through interview and observation.
3. Poverty alleviation indicators and available resources, including; education, health, work, habitat and infrastructure.
4. Positive developments in health and pre-school education through the ICDS programs
5. Factors of exclusion from Karnal development.

Chapter 10: Agriculture and Irrigation

1. Riding high on the success of Green Revolution, rice production in the state of Haryana has doubled between 1995 and 2013 while that of wheat has soared by 35%.
2. Rice and wheat are the two major food grains produced in Karnal which ranks among the top five districts in the state.
3. Although the Rice-Wheat Cropping System (RWCS) of Karnal is among the best in the state, in recent times it has resulted in substantial depletion of water resources which need to be addressed using appropriate management strategies.

4. The Western Yamuna Canal (WYC) has been the mainstay of irrigation in Karnal, as in other parts of the state. In recent times, deep tubewells are being increasingly used for the purpose, which, however, adds to depletion of groundwater resources.
5. A number of advanced research and training institutes and Centers of Excellence has established Karnal as a pathfinder on the agricultural map of the nation.

Chapter 11: Industries

1. Karnal has a dominant industrial sector, and has six industrial clusters: Rice Mills, Agricultural Implements, Paints and Chemicals, Pharmaceuticals, Print and Packaging and an upcoming Dairy Cluster.
2. Green Revolution drove rice cultivation in the region, which led to emergence of agricultural implements industry. This necessitates the birth of paints industry. The pharmaceutical industry is a result of sizable educated population, and along with the rise of computer revolution in the 90s, printing industry flourished.
3. The real growth in industries took place from late 70s until 2000. The growth has slowed down in 2000s.
4. Almost one-third of employment and number of industrial units are agro-based.
5. Most industrial set ups are micro and small scale in nature and therefore any policy design in this sector has a direct impact on Karnal.

Chapter 12: Labor and Informality

1. Agriculture, historically, was the main occupation of the people of Karnal. Once agro-based jobs are kept aside, general laborers, beggars, corn grinder, leather boot makers, water carriers cotton grinders were the main professions (1881 Census).
2. In last 25 years, non-workers have increased, marginal workers have increased in male population, agricultural laborers have remained stable and so have the cultivators. Real wage rates haven't changed much in farm sector.
3. More than 90% of Karnal youth are literate, this possessing huge promise for its future.
4. The migrant population comes from Bihar that works in agricultural mandis, and from Rajasthan, Bihar and UP that works in brick, kilns.
5. Sadar Bazaar is a fascinating market of Karnal that give the city, a vibrating pulse.
6. Labor union dynamics in Karnal have remained rather peaceful.

Chapter 13: Banking

1. Impressive Banking Spread in Karnal
2. High coverage of banking sector in rural areas of Karnal, especially by private banks.
3. High incidence of off-site ATM machines
4. Excellent performance of all banks in achieving targets of priority sector lending
5. Private banks are in general performing better than the public banks in Karnal

Chapter 14: Public Health

1. Karnal district's strides in the public health sector, with the health statistics of Karnal compared with the national and state targets. Also discussed is the need for creating more facilities for the population and the Kalpana Chawla Medical College.
2. The infrastructure of the PHCs and CHCs along with the figures of the bed/patient ratio from the Civil Hospital also suggest that during certain months of the year, the hospital infrastructure falls short of catering to all the patients.
3. Karnal has already achieved 97% of the institutional deliveries (which is very close to the national projected target of 100% institutional deliveries by the year 2017). Haryana state has achieved 84.6% institutional deliveries whereas the national achievement is 79.7%. Indeed, Karnal is performing considerably well in increasing institutional deliveries.
4. Karnal still needs to improve the sex ratio at birth, which stands at 904 females for every 1000 males. This is pointedly lower than the targeted ratio of 940. However, compared to the Haryana state ratio (which stands at 864) Karnal has performed much better on this parameter as well.
5. Thus, in its imagination as a smart city, Karnal needs to invest more on the health sector to provide better access of health care to the general population. There is a need to expand the infrastructure in terms of human resources and modern technology.

Chapter 15: Education

1. The transition rate from primary to upper primary education level has improved from 87.2% in 2005-06 to 98.9% in 2011-12. Gross Enrolment Ratio (GER), at a primary level, has gone up from 68.9 in 2005-06 to 95.3 in 2013-14. At the upper primary level, it has improved from 56.8 in 2005-06 to 90.3 in 2013-14.

2. GER in higher education within the district of Karnal is 24.3. It is ranked 14th amid 21 districts in the state. GER for urban Karnal is almost double than that of rural Karnal.
3. There is no university in the district. On one hand, there are 10 colleges imparting general education in the Karnal block, whilst on the other, there is only one college imparting general education in the other blocks of Gharau da, Indri, Nilokheri and Nissing.
4. According to NAAC, there are only 9 higher education institutions that have a valid accreditation as of January 2016. Amongst this, 7 are colleges of education and out of these 7 colleges, 6 are private institutions.
5. The Vocational Education and Training (VET) system in Karnal is not extensive and has been predominated by the private sector. As is the case with other educational institutions, the distribution of the vocational education and training institutions are highly skewed with most of the VET institutions located in the Karnal block.
6. There have been enormous improvements in the GER, number of educational institutions and the quality of education in the Karnal district since 1966.

Chapter 16: Police and Judiciary

1. Karnal has a police population ratio of 1 per 1000 people. The crime rate (2003-14) is approximately 5.5 per 1000 persons which is much lower than the State of Haryana average of 24 per 1000 population.
2. The decadal trends of crimes (2005-15) suggest a sharp increase in narcotics related offences. In recent times, specific crimes peculiar to this geographical region have necessitated creation of special units/cells such as the Mining Unit which combats with the growing activities of the sand mafia in this industrial corridor of Haryana.
3. In crimes against women (2005-15), cruelty linked to incidences of dowry death and domestic violence have seen a steep rise. The setting up of Mahila police station in August 2015 has been a positive step in monitoring of crimes against women
4. In the case of District Jail, while several novel initiatives such as Public Private Partnership (PPP) programs with the handloom sector in Panipat have been undertaken to rehabilitate the inmates, however, the existence of large number of undertrials is a serious cause of concern. For a prison population (2014) of more than 2000 convicts, almost 58% are undertrials with majority comprising the age group between 19-30 years.
5. For a population of approximately 1,500,000, there are about 27 district judges in Karnal. This makes the judge population ratio as 1.8 for 100,000 people which is higher than the national average of 1.2 per 100,000 population. In recent times, new initiatives have been undertaken by the district judiciary to increase access to justice for all. A special court was also set up in 2013 to take up heinous crimes against women and provide speedy justice to the victims.

Chapter 17: Political Participation

1. Citizens of Karnal are generally politically active.
2. Elections are generally very peaceful.
3. Negligible instances of violence during elections.
4. Spread of Panchayats is uneven, with highest spread in Assandh block and the lowest spread in Gharaunda block.
5. Karnal has a dynamic Systematic Voters' Education and Electoral Participation program.

Chapter 18: Environment and Water Resources

1. Climatic patterns in Karnal district are changing over time which are expected to affect sustainable development in the district.
2. The district is divided into three agro-climatic regions, namely khadar, bangar and nardak, which vary widely in terms of in soil-hydrologic properties.
3. Water levels has dropped alarmingly in recent times, much to the cause of agricultural irrigation which is increasingly getting dependent on groundwater resources.
4. Entire potable water supply of the district, especially in the more urbanized locales, comes from groundwater resources.
5. As abstraction exceeds natural replenishment of the aquifers (water-bearing formations) by large margins, each block of the district is classified as "overexploited" in terms of water resources availability and vulnerability.

Chapter 19: Conclusion



