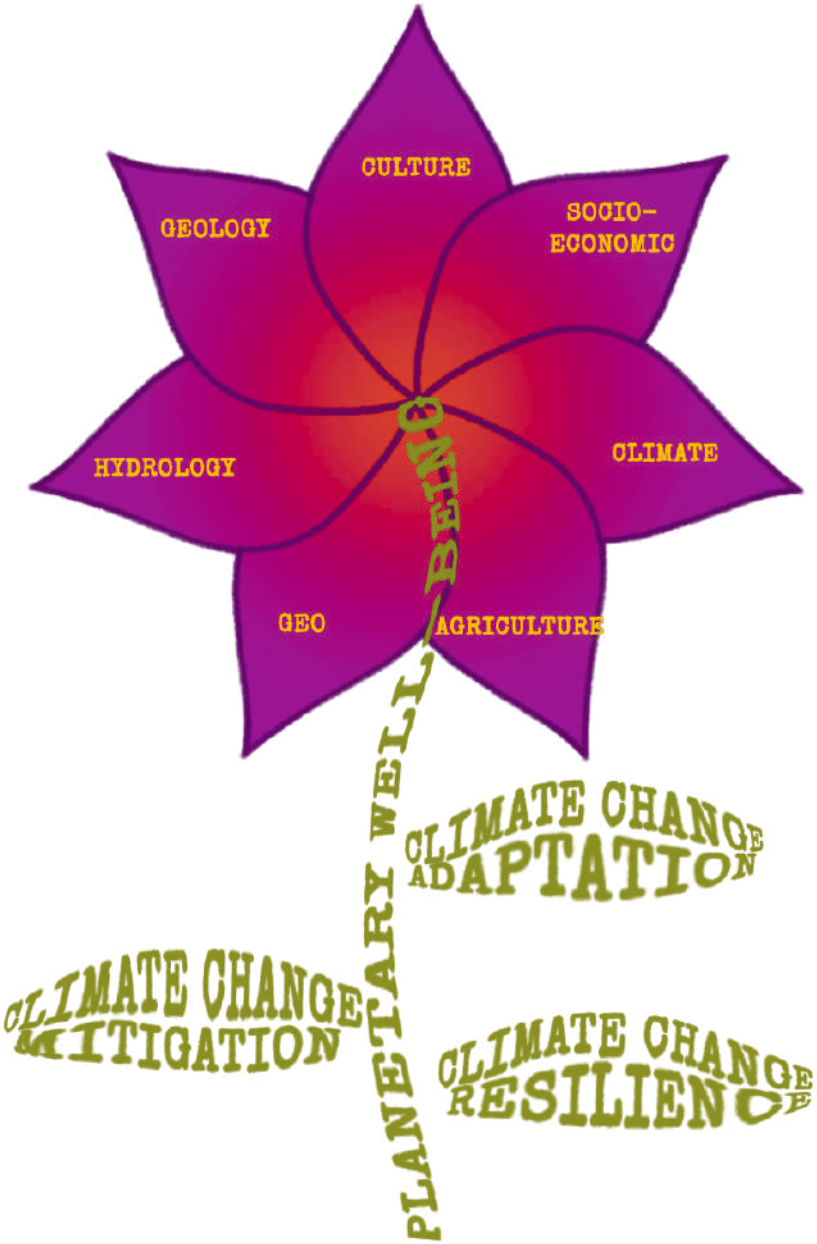
Geo-Cultural Map of India:

A Document of Harmony Between Culture and Nature

An Initiative by Anant Centre for Indigenous Knowledge Systems and Practices


CULTURE
GEOLOGY
SOCIO-
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CLIMATE
GEO
AGRICULTURE
PLANETARY WELL-BEING
CLIMATE CHANGE ADAPTATION
CLIMATE CHANGE MITIGATION
CLIMATE CHANGE RESILIENCE

Acknowledgement

Dedicated to: The local communities of the Ahmedabad district, whose knowledge enriches the contents of this booklet, for teaching us an inclusive way of looking at our region through geo-cultural maps.

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Aims and Objectives:

This booklet offers a fresh way to experience a region through a geo-cultural map, which brings together its physical form, natural systems and cultural identity alive. It's not just a collection of locations but a deeper exploration of how people, places and practices come together to shape the district's unique character by blending on-the-ground observations with scientific research. This map tells stories of the land, the water, the festivals, the crafts, the climate and the communities that define a geo-cultural region. This booklet is a step forward in showing how geo-cultural maps can be used for better decision-making, community development and heritage protection.

At the heart of this project is a desire to make the city more understandable and relatable to anyone who interacts with it. The aim is to highlight how nature, people, history and local life are closely connected in each region. In this project, we focus on seven main aspects of the region: landforms (geophysical), water systems (hydrological), farming (agricultural), natural habitats (ecological), heritage and traditions (cultural), climate conditions and local industries and work (socio-economic). By collecting and organising data on all seven, we show how they overlap and influence each other.

Through these lenses, the booklet aims to represent the Ahmedabad district as a living system where nature and culture constantly interact. The main objective of this project is to create a map that brings together different ways of understanding Ahmedabad and to create a tool that informs and inspires people to understand how geography, environment and culture are deeply interconnected. This map hopes to invite curiosity, reflection and a more conscious way of seeing Ahmedabad as part of a larger story.

Research Methodology

The geo-cultural booklet is based on mixed research methods. It is primarily analytical research, documenting and highlighting the importance, possibilities and challenges of representing the geo-cultural features of a region on a map.

The booklet is based on the qualitative method of 'oral history' to understand the dynamic and scattered indigenous traditions of the Ahmedabad district, which are not formally organised into written records. It is to highlight that literacy, i.e. the ability to read and write, is a tool, not wisdom in itself. Oral history is not individualistic; it is based on the people's collective memories and their social interactions. It not only accounts for the stories of kings, warriors, merchants and intellectuals but also for the lives and practices of common people. These perspectives are downgraded in the conventional practice of writing historical accounts. They are often tagged as folklore, myths, and unscientific beliefs, but they are never considered repositories of knowledge. Thus, oral history is the most suited tool for understanding people's history.

The booklet was mainly based on a wide range of secondary data collection to gather information and accurate coordinates on the geo-cultural features of the Ahmedabad district. The information used in this project was collected from government documents, academic sources, local records and field visits. The research relied on the different official reports from the National and State public departments, like the Central Ground Water Board report on the Ahmedabad district, Gujarat's State Agriculture Department report, etc. Google Maps and Google Earth were used to identify and locate the accurate coordinates of the geographical location. The research methodology of the booklet aspires to honour the vibrancy of the community's understanding of their region while simultaneously relying on modern geospatial analysis technology to locate the documented features on the map.

Scope and Limitations

This booklet is a student-led pilot project to create a geo-cultural map of the Ahmedabad district while combining design, research and fieldwork. It builds on the vision of Tarun Bharat Sangh, an NGO based in the Alwar district of Rajasthan, which works on rejuvenating the traditional water bodies along with the local communities, which encourages recognising and protecting India's 86 geo-cultural zones. This booklet is meant to be a tool for planning and discussion. It is not only for experts but also for government officials, educators and citizens who want to understand Ahmedabad as a geo-cultural region beyond district boundaries.

However, there are several limitations to the booklet. Ahmedabad district is a large and incredibly diverse region. From dense city streets to quiet villages, industrial zones to riverbanks, each area tells its own story. With limited time and resources, exploring every corner with the same depth was impossible. Some rural areas or places that don't appear in official records might be underrepresented in this version.

The data for the booklet is gathered from trusted sources, government records, research papers, field visits and local conversations. However, some important information is missing in these records, too. For instance, a stepwell used only by a few nearby families or a local craft that's slowly disappearing might not appear in the datasets we had access to. These parts of the landscape often live in people's memories, stories and everyday practices.

The map in this booklet has been designed to be simple to read. Rather than diving into highly technical or legal mapping, the focus is on showing patterns and relationships between features, like where heritage meets water or where farming sits next to industry. The booklet is a tool for conversation, not for construction plans or zoning approvals.

Since this is a printed document, it's static. There is no possibility to look through layers or explore changes over time. Finally, this booklet only shares an alternative approach to looking at the district (political unit), one that respects how culture and nature shape each other. It's a first step with the hope of more layered and thoughtful planning in the future.

Introduction

The ‘Geo-Cultural Map of India’ is an innovative initiative that depicts India’s diverse land, climate and cultural identity. This map highlights the relationship between nature and culture, a relationship which defines the soul of the country. This map presents a holistic form by combining the depiction of the Earth, nature, human structure, behaviour and culture. It provides us with this vision, a new direction to our development plans and models, and to our political and social consciousness. This map shows the path of sustainable development without distortion, displacement and destruction.

The public departments in India do not have such maps. The political maps adopted post-independence represent administrative boundaries and fail to showcase the rich diversity of our land; they only highlight wards, tehsils, districts, states, etc. This is why we fail to teach and learn as a society to live in harmony with our own land. The roots of our civilisation have been connected to rivers, mountains, forests and fields. This connection was inherent in the knowledge systems of indigenous communities. Unfortunately, these deep and traditional relationships were not given due importance in the modern development model adopted post-independence, which was fragmented and greedy, which taught us to think in pieces, not in totality.

Going beyond such maps, the geo-cultural maps provide us with a harmonious, sustainable and non-violent vision of development, in which the true spirit of unity can be understood by respecting geo-cultural diversity. This map speaks the language of not just geography but also emotional and cultural attachment. This map will be easily accessible and understandable to farmers, fishermen, workers, engineers, designers, architects, researchers, students, etc.

Parameters of the Geo-cultural Map:

There are seven key parameters of a geo-cultural map:

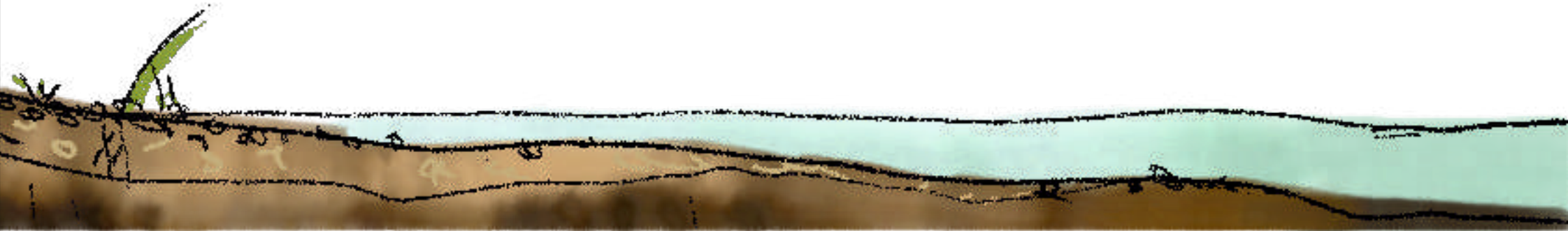
1. Geology
2. Hydrology
3. Agriculture
4. Ecology
5. Cultural
6. Socio-Economic
7. Climatic

Each of these parameters is interconnected to the others. Without understanding each and the relationship between them, one cannot look at any geographical region holistically, as the place is not just the land but also holds the lives of people on it.

A. Geology

Geology is the study of earth science, which includes the composition of rocks and minerals, soil forms and types of tectonic activity. The Geological elements help us study the structure and composition of the Earth, along with the processes that influence its form. Several important defining characteristics, such as landforms, rock types and tectonic activity, decide a place's geology. Other factors include the terrain/topography, the contours, the sea level, the ground level, fossils and various minerals and metals. The geology of a place decides the types of flora and fauna available in the region. The geological processes of mountain building and erosion create different landscapes suitable for different species of animals to live in. For example, cliffs, caves and rock formations act as suitable habitats for bats or plants adapted to rocky slopes. The kind of rocks in a pond determines its pH level, deciding the species of aquatic beings existing in the pond.

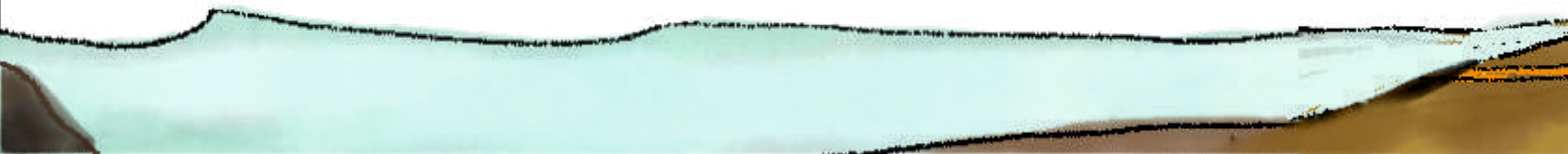
Taking the geology of a place into consideration while planning for development is very crucial to designing sustainable and climatically appropriate infrastructure, keeping in mind the dignified existence of living beings in their own ecological habitats. For example, taking geology into account before selecting local raw materials suitable for buildings. The height of the building, as well as the depth of its foundation, needs to be decided by the rock type below the building.



B. Hydrology

The hydrology of a place is how the water flows, circulates and accumulates in the Earth's fissures. According to the space available underground, water fills the spaces beneath the Earth, and we give names to these water bodies. They include ponds, rivers, lakes, streams, reservoirs, wetlands, water catchment areas, water overdrafts (places of excess withdrawal of underground water), etc. Water bodies tend to connect to other water bodies hierarchically. Smaller water bodies recharge underground aquifers, which, in turn, recharge wells and rivers in the area. Rivers flow further to meet the ocean, completing the loop.

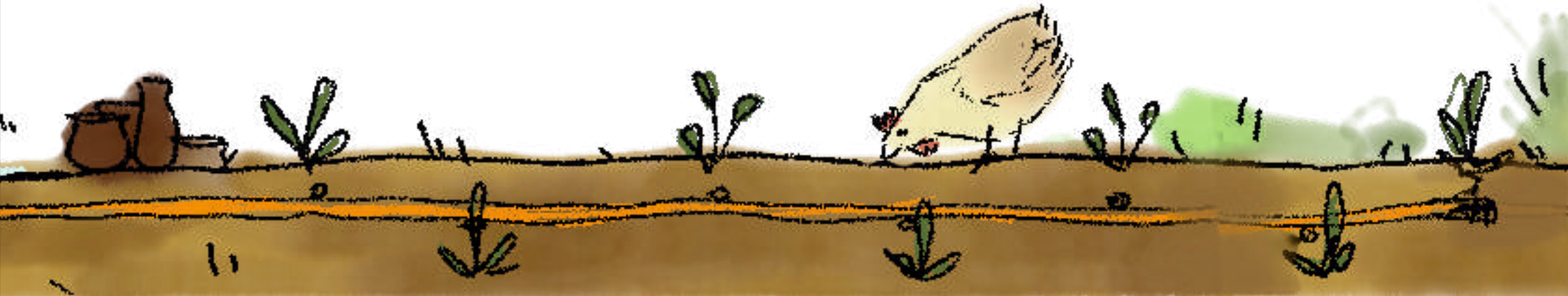
Other factors, like annual rainfall, moisture content, air humidity, groundwater, etc., are also important while studying the hydrological system of an area. The hydrology shapes the relationship between water and the architecture of a particular area. Material procurement, structural integrity and resource transportation are important factors heavily influenced by the hydrology of a site. For example, material that would withstand heavy storms and winds would be required to maintain the structural integrity of a building in Ladakh or Cherrapunji. Engineering is connected to hydrology as well. Civil engineers need to take into consideration the flow of water and its intensity before building structures like bridges, dams, etc. They need to understand processes like precipitation, runoff, groundwater flow, etc. If hydrology is not taken into consideration while developing an area, it would adversely affect the society and its economy, as well as the climate in the area. For example, designing inefficient sewage systems according to the place's hydrology may result in soil infiltration and groundwater contamination, which will change the quality of groundwater extracted by humans for various purposes like drinking, agricultural irrigation, etc. This may lead to health concerns in the area, adversely affecting the occupations of people and eventually affecting the economy of the place.



C. Agriculture

Agriculture is one of the first human-environment activities. It is the planting of the seeds of crops, vegetables and fruits into the soil with proper conditions, resulting in food production that sustains life. For example, rice cultivation requires water to be stored in paddy fields; a region where it rains heavily would be more suitable than one where it is arid. Agriculture contains information on the types of crops grown in a particular region. It is a primary driver of human interaction with the environment, reflecting the adaptation and development of societies over time. This helps determine the type of soil, the amount of rainfall and the culture tied to the land. Agriculture is not just a means of food production; it is a cultural force that shapes the land, influences human-environment interactions and provides valuable data for geocultural mapping and analysis. In the mountainous regions, the construction of rice terraces for irrigation is a prime example of how agricultural practices modify the landscape and shape cultural identity.

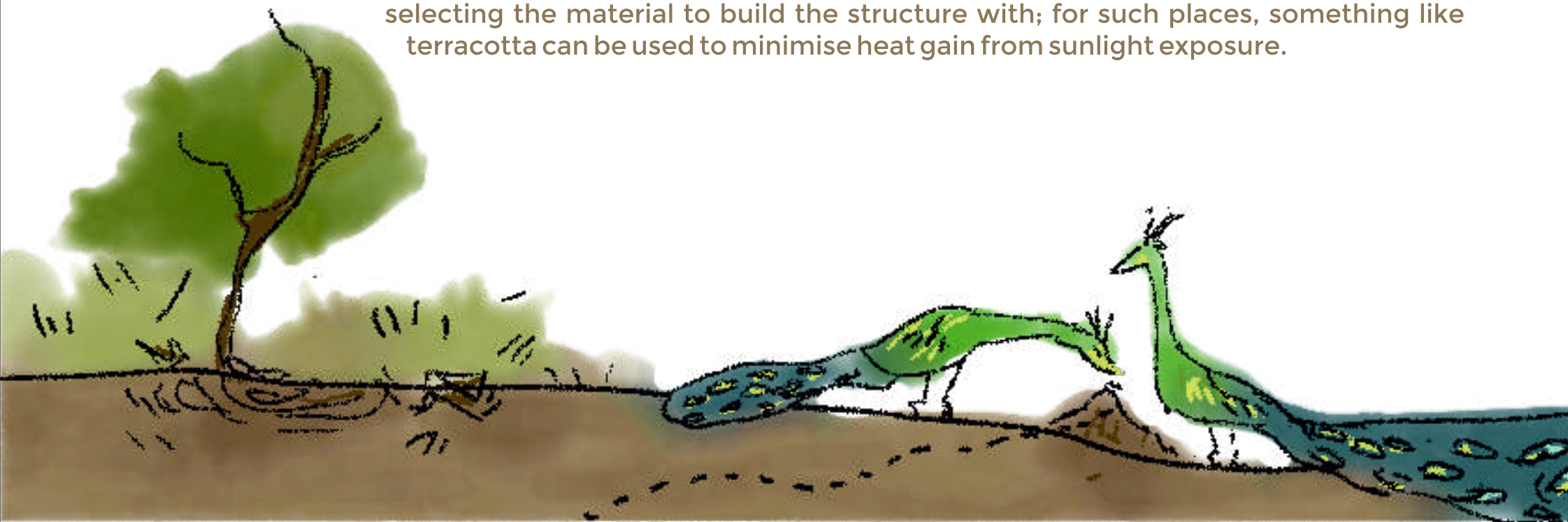
If the agricultural practices of a region are ignored in the process of development, there might be danger to the production of food and other necessities like clothes. If the agricultural lands are encroached or reduced, production will be less, there will be a shortage of food, and demand will increase, leading to a rise in the cost of the products. If the farmers lose their land for cultivation, they have to look for other jobs that might not be suitable for them to earn a livelihood with dignity. This is one of the main reasons for the rapid rates of farmers' suicide in different parts of India.



D. Ecology

Ecology gives us a comprehensive idea of the biotic and abiotic factors affecting living beings. The biotic factors are the living components: the microorganisms, the plants and the animals, that is, the producers, the consumers and the decomposers. The abiotic factors include the non-living chemical/physical components in the environment. For example, sunlight, water, temperature, pH levels, etc. These factors continuously interact with each other to keep the environment around us functional and running. Their interactions keep the living world connected to its environment, which is essential for human welfare and well-being.

It is important to know a place, with regard to its people, plants and animals, along with their relations with the abiotic factors, which gives an overall understanding to any person designing a development model for an area. An architect, for example, needs to be aware of the amount of sunlight on the site before selecting the material to build the structure with; for such places, something like terracotta can be used to minimise heat gain from sunlight exposure.



E. Cultural

Culture, defined simply, could be a set of norms, art, behaviours, clothing and even food. It is the shared beliefs, values, traditions and practices that distinguish a group of people from another. It could be the folk dance performed during ceremonies or the traditional cooking. Culture plays a crucial role by highlighting the way local stories, practices, relationships and rituals shape the meaning of places. It involves identifying and mapping both tangible and intangible cultural assets, ultimately aiming to understand the cultural geography of an area. Tangible assets can include the type of architecture, monuments and archaeological sites. Intangible assets refer to the cultural practices and traditions passed down through generations. If the culture is not taken into consideration during any development project, the people may not support it. For anything to last long, it needs beauty. No matter how big and strong you have made a building or anything of function, if it does not have the beauty of culture, no one will be willing to take care of it. If an object has the value of culture, it will never have to be repaired because the people will not let it break.

F. Socio-Economic

The factors affecting economies are income, education, healthcare access, housing and social support, among others. These factors play a key role in designing the social structures of different places. The education of an individual places them in a certain social setting according to the nature of their profession. This affects their income and, when looked at broadly, the cost of living in that particular geographical area.

Social economics affects the kind of infrastructure to be developed. For example, a strong economy would be able to provide enough resources for elaborate and expensive designs, leading to innovative architecture. On the other hand, a weak economy may not be able to provide resources for innovative experimental design, leading to more functional and cost-effective architecture.

If the socio-economic factors aren't taken into consideration while developing an area, it will directly affect the progress of a society. The socio-cultural aspects play a major role in shaping any economy.

G. Climate

The climate is the long-term average weather condition of a particular region, observed over a long time, that is, at least 30 years. This is used to cover information on the temperature, cloud cover, wind speed and humidity of the given region. The climate plays a crucial role in shaping human settlement patterns, influencing cultural practices and impacting economic activities. For example, if the temperature rises, the cost of the vegetables in the market would increase, as they need to be consumed as soon as possible rather than being stored.

The climate also significantly impacts where people choose to settle and how densely they populate an area. Arid climates may lead to sparse populations and nomadic lifestyles, while temperate climates often support larger, more settled communities. It is important to know the natural patterns to avoid or remedy any disaster. If the climatic conditions are not taken into consideration while developing something, it will cause more unexpected natural disasters, affecting millions.

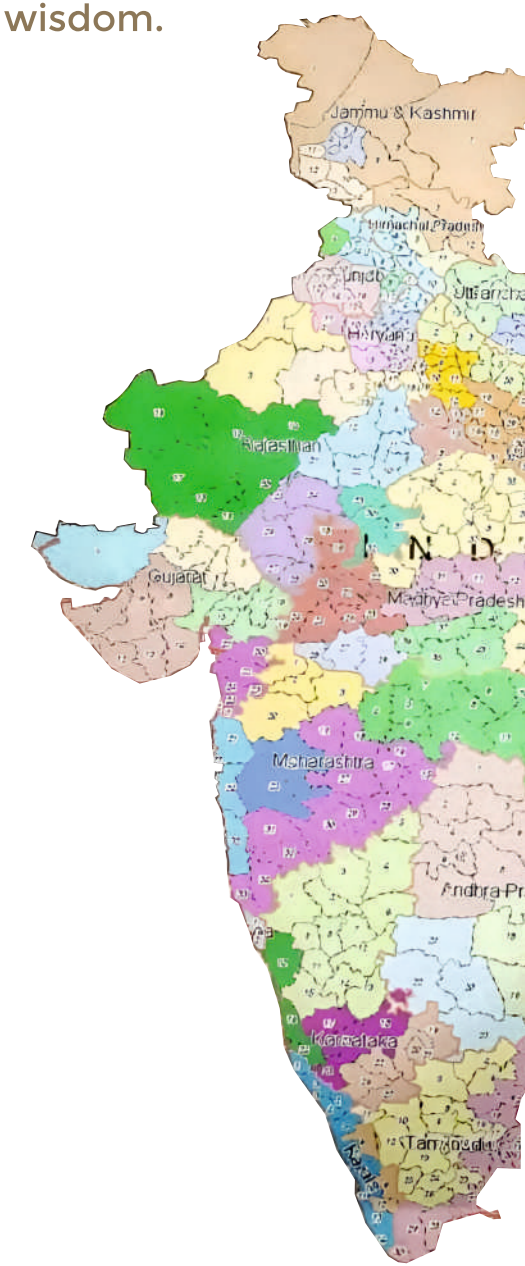
Tarun Bharat Sangh undertook a nation-wide activity of categorising and documenting the geo-cultural regions in the country. After successful completion of their research, they identified 50 physiographic units in India:

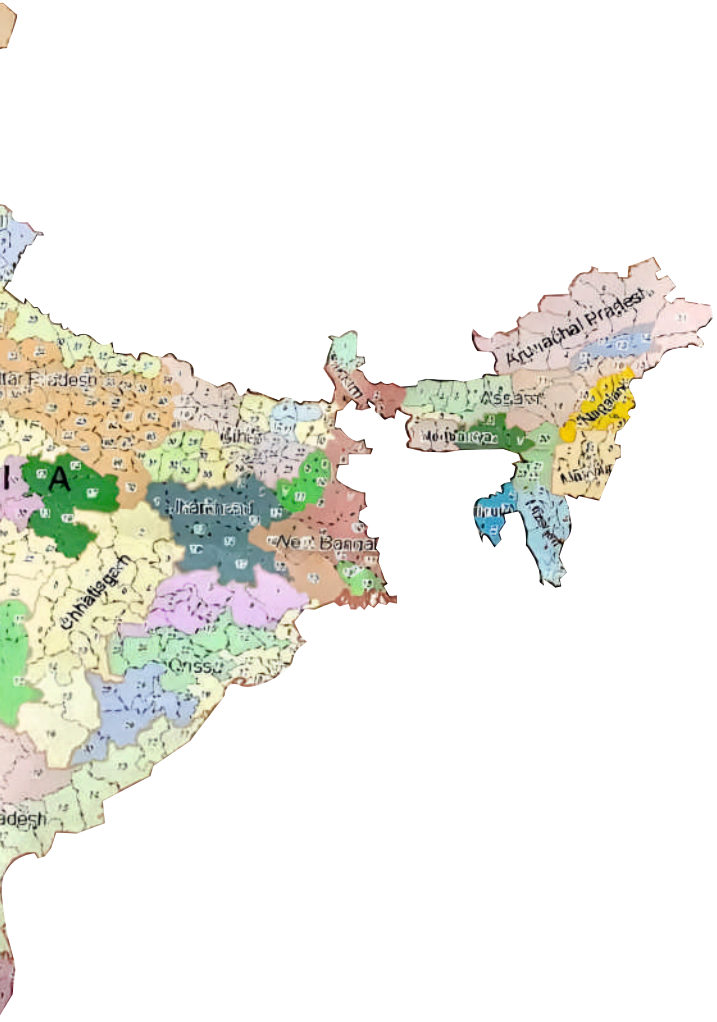
The following is the list of physiographic units in India:
1.North kashmir Himalaya
2.South Kashmir Himalaya
3.Punjab Himalaya
4.Kumaun Himalaya
5.Punjab Plains
6.Ganga Yamuna
7.Rohikhand Plains
8.Marusthali
9.Rajasthan Bagar
10.Aravali Range
11.East Rajasthan Uplands
12.Madhya Bharat Pathar
13.Bundelkhand Upland
14.Avadh Plains
15.Vindhyan Scarp Lands
16.Malwa Plateau
17.Kutch Peninsula
18.Kathiawar Peninsula
19.Gujarat Plains
20.Narmada Valley
21.Vindhyan Range
22.Satpura Range
23.Maharastra Plateau

24.North Sahyadri
25.Dentral Sahyadri
26.South Sahyadri
27.Baghelkhand Plateau
28.Chotanguir Plateau
29.North Bihar Plains
30.South Bihar Plains
31.Eastern Himalaya
32.North Bengal Plains
33.Purvanchal
34.Assam Valley
35.Meghalaya
36.Bengal basin
37.Garhjat Hills
38.Mahanadi Basin
39.Dandakaranya
40.Karnataka Plateau
41.Eastern Ghats (South)
42.Eastern Ghats (North)
43.Tamil Nadu Uplands
44.Tamil Nadu Plains
45.Andhra Plains
46.Utkal Plains
47.Kerala Plains
48.Karnataka Coast
49.Konkan
50.Telangana Plateau

More importantly, the organisation identified 86 geo-cultural regions in India. These regions were special in the above mentioned seven parameters of demarcating a geo-cultural region. This map marks the speciality of the regions in India based on the key features of indigenous wisdom. The list is:

1.Telangana
2.Kaling Coastal & Delta Krishna-Godawari
3.Rayalseema
4.63 Tri Vitiran, Missi and Changlang
5.Kamrup
6.Bogain Gaon (Bodo)
7.Aahom
8.Karbi
9.Mishing
10.Lakshadweep Region
11.Maghad - Patliputra
12.Son
13.Gandak
14.Mahanadi
15.Kosi
16.Ang Region
17.Dhandakranya
18.Mahakaushal
19.Biruj
20.Andaman and Nicobar Region
21.Coastal, Hilly and Plateau
22.South Gujarat
23.Kachha ka Ran
24.North Gujarat
25.Saurashtra
26.Central Gujarat
27.Yamuna Vihar
28.Jatwal
29.Aahirwal
30.Shivalik
31.Cold Desert
32.Himalaya Range (Mahasu)
33.Kashmir Ghati
34.Shivalik
35.Santhala Pargana
36.Koylanchal
37.Central Karnataka
38.Coastal Karnataka/ Malayanad
39.North East Karnataka
40.Pahadi Pathari
41.Doab Region
42.Coastal Kerala





43.Hilly & Plateau Kerala
44.Baghelkhand
45.Nimad Region
46.Bundelkhand - Chambal
47.Bundelkhand
48.Satpuda Narmada Region
49.Malva Region
50.Vidharbha Region
51.Central Region
52.Marathwada
53.Khan Desh
54.Coastal Region
55.Madu Tai Region
56.Khasi Land
57.Goro Land
58.Mizoram
59.Nagaland
60.Indraprastha
61.Khandavprastha
62.Parimi Dadiya Region
63.South Region
64.North Region
65.Coastal Dandiya
66.Doaba Region
67.Malva Region
68.Puad Region
69.Thar Region
70.Mewar Region
71.Dundhad Region
72.Hadoti Region
73.Shekhawati Region
74.Marwar Region
75.Sikkim
76.Coastal Region
77.South Hilly & Plateau Region
78.Tripura
79.Purvanchal & Vindhayancha
80.Gadwal Region
81.Tarai Region
82.Kumayon
83.Pateau Region
84.Sea Delta Region
85.Tarai & Flat Region
86.Majha Region

Why is a Geo-Cultural Map Important?

The Geo-Cultural Map is like a bridge connecting the communities and anyone who aspires to provide a better way of living to all through working and learning with the community's knowledge.

The documentation process through geo-cultural maps is important as it provides a tool for using indigenous wisdom in modern design and infrastructure approaches. It is a solution to decolonise the categories of understanding our commons. It informs a comprehensive approach to looking at the interconnectedness between the different natural and social features superficially arranged in water-tight compartments in modern knowledge systems. It will help us to be resilient to the forceful universal metanarratives, influencing unsustainable practices in terms of food, health practices, fashion, etc., at the cost of our personal and ecological health. It makes us open to alternative sustainable ways of living that are suitable and respectful to our geospatial and cultural context.

For common people, the map is important because it binds them together, highlighting how their existence is dependent on knowledge practices and services of different communities in the region. It reminds them of the rich heritage they belong to. It empowers them as knowledge holders, as their experiences are placed in higher regard. It challenges the superimposed binary of knowledge and experience and rather focuses on the intrinsic relationship between the two.

Geo-Cultural Mapping of Ahmedabad District: A Case Study

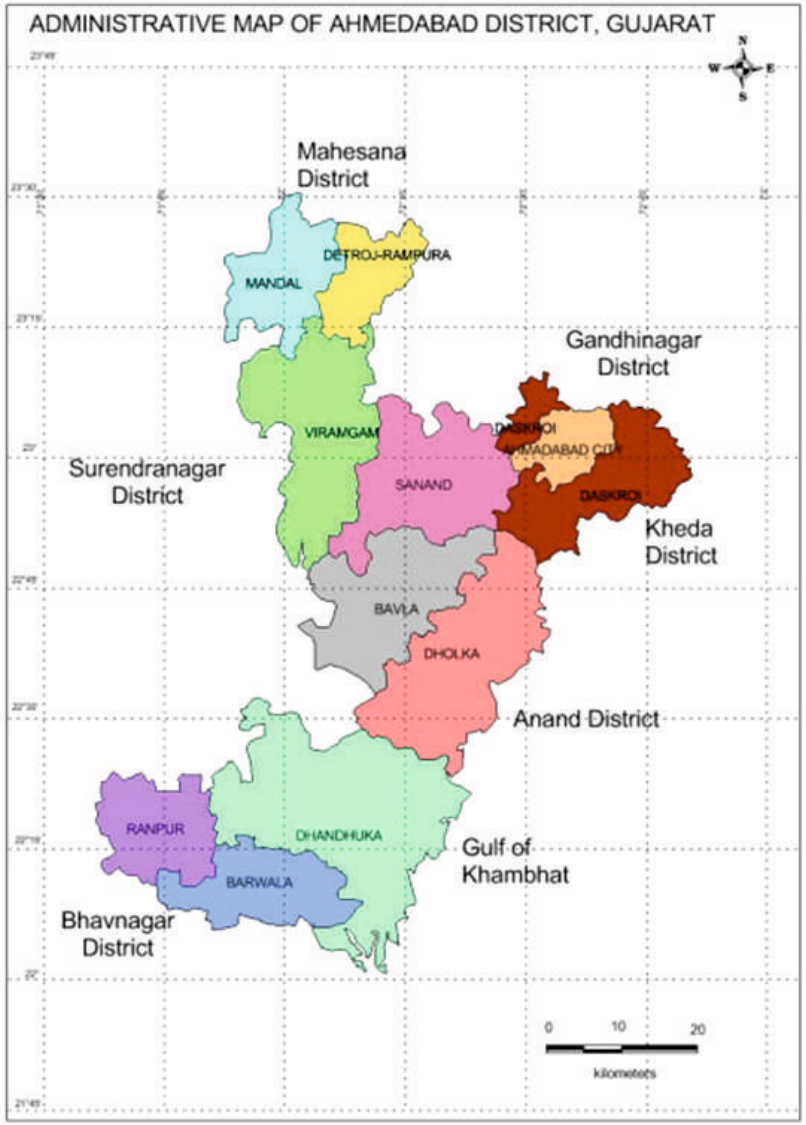


Figure 3: Administrative Map of Ahmedabad District
Source: Ground Water Brochure of Ahmedabad District compiled by RK Verma, Assistant Hydrogeologist, Central Ground water Board, March 2014

Exploring Ahmedabad City Through People's Eyes

The people of Ahmedabad city feel proud of their ancient roots. It is an old city with phenomenal monuments, bustling markets, vibrant colours, nostalgic flavours and aromatic smells. The trade flourished in the city and attracted various merchants, making it a hub for the textile industry. It was thus named the 'Manchester of India' for its exponentially growing cotton industry. Silk and brocade were also produced on a large scale, which led to them being used for traditional attire. While textiles were dominant, the city also developed as a trading centre for oilseeds, vegetable oil and jaggery, which explains the method of frying used excessively in Amdavadi cuisine. Readily available oils were used to fry, sauté and flavour various dishes.

The people associate the city with powerful edifices like the Bhadra Fort, Bhadra Kali Mandir, Teen Darwaza, Jama Masjid, etc. They relate themselves to the famous dishes served to the merchants at the Chandra Vilas Hotel, Lucky Hotel, etc. They remember the festivals and community processions in the Pol Houses. They still remember the Kadiya community that made tankas (traditional rainwater harvesting reservoirs) in their houses and temples. They still gather in the veranda of the Swaminarayan Temple to pray.

Figure 4: Picture taken while interviewing Laxmi Ji outside the Swaminarayan Temple on 16 May 2025. Her family has been selling vegetables outside the temple for the last 6-7 generations.

The social fabric of Ahmedabad is changing in modern times, with more families leaving the traditional Pol housing systems to live on the outskirts for better facilities and better career opportunities. This shift has come mainly in light of the rise of the new middle, aspirational for economic growth. As the old city expands, the roads become congested, and parking turns into an issue, an important requirement of the urban population.

The social and political turmoil and unrest in the old city area, mainly the riots in the city around 1990-1995, which the local people refer to as Toofan, have also been deciding factors. The old city changed from a locality to a market, and almost all the inhabitants left their Pol Houses to benefit from the rent they garnered. The common people fear that if they don't settle outside the city, it will impact the marriage prospects of their children. They wish to move to the outskirts, to places like the Satellite area, which marks economic affluence. However, the city hasn't changed much for those who can't afford to move out - street vendors, vegetable and fruit sellers, small merchants, etc. They adore city life for its intimate and vibrant atmosphere. Thus, various factors interconnect and form the beautiful city of Ahmedabad, leaving it to us to decipher the meaning of each tangled thread.

Geo-Cultural features of Ahmedabad:

Ahmedabad is geographically located in the western part of India on the banks of the Sabarmati River. Its proximity to a river has shaped its trade and culture. The district is widely known for its vibrant, rich culture, which includes intricate traditional architecture, mouthwatering Amdavadi cuisine, embroidered traditional clothing, etc. The Sabarmati River facilitated trade, transportation and resource access. All of Ahmedabad's cultural aspects are tied to major economic and social factors of the place. A net of connections is found when one digs deeper into the history of this magnificent place.

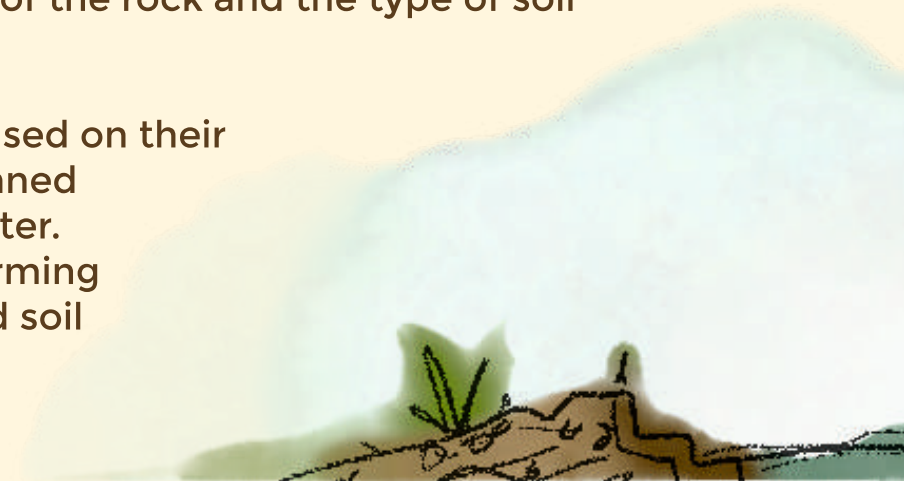
Geology of Ahmedabad District

Ahmedabad district lies on the alluvial plains formed by the Sabarmati River over a long period of time. The upper layers of soil are made of clay, silt, sand and gravel deposited by the river. These are useful for agriculture and construction. Underneath this soil lies a much older layer of hard, black basalt rock known as the Deccan Traps. This rock was formed by volcanic activity millions of years ago. Together, the mix of soft soil and strong rock has made the land suitable for farming, settlement and traditional industries.

The geological base has played a major role in how people have lived and used the land. The fertile topsoil made it possible to grow crops like cotton, groundnut and wheat. The basalt rock below helps store underground water, which has supported wells and step wells across the region. Natural resources like clay and sand have been used for making bricks, tiles, and pottery, which are trades that are still seen in some areas today.

Ahmedabad falls in a tectonically stable zone, meaning it does not face frequent earthquakes. However, fault lines do exist in parts of Gujarat, especially towards the north and west. This makes it important to understand the nature of soil and rocks before undertaking large construction projects like highways, buildings or industrial areas. Knowing the depth of the rock and the type of soil helps in planning safe and sustainable development.

In the past, local communities designed their water systems based on their knowledge of the land. Step wells, ponds, and canals were planned carefully, using the slope of the land and the natural flow of water. These systems helped collect rainwater and supported both farming and everyday life. They also kept the land strong and prevented soil erosion.



Today, many of these traditional systems have disappeared. With rapid construction and growing demand for water, groundwater is being overused in several parts of the district. In some areas, pollution from factories has also affected the quality of soil and water. As a result, the natural balance is under pressure. Understanding the land beneath us, its soil, rocks and water, is key to protecting Ahmedabad's environment and supporting its people in the long run.

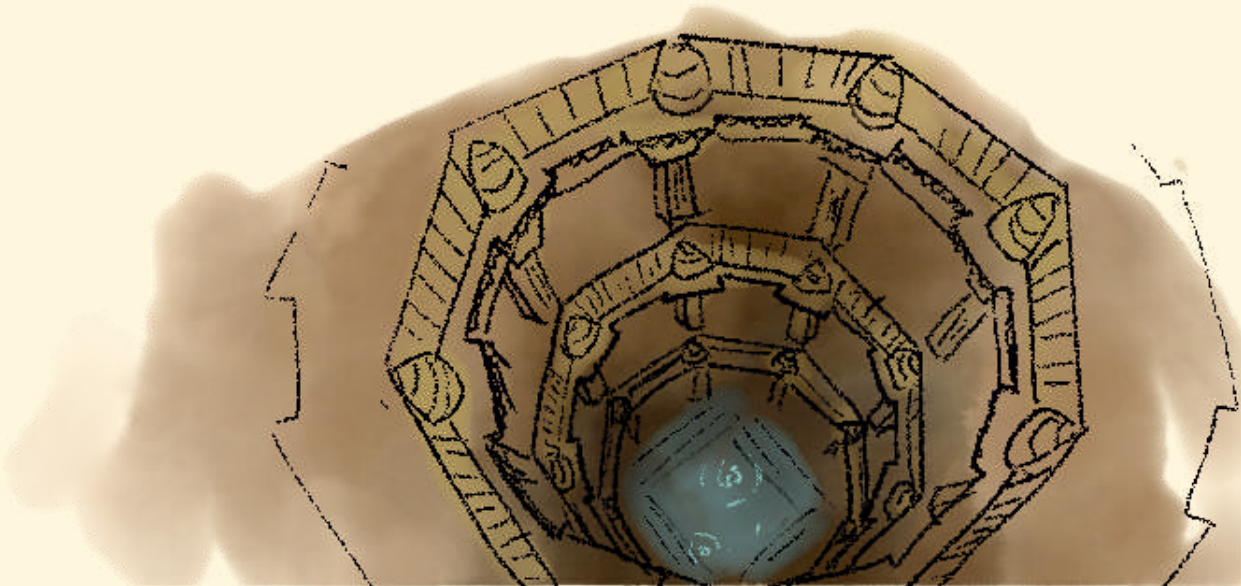
Hydrology of Ahmedabad District

The Ahmedabad district majorly relies on surface water for its water needs. 68% of the district's needs are met by canal-based surface water, 14% by untreated effluents released by the Ahmedabad Municipal Corporation (AMC) and the remaining 18% is the groundwater availability in the district.

The Ahmedabad district has a well-connected drainage system. The main rivers of the district are Sabarmati, Khari, Meshwo, Bhogavo, Bhadar, Shelwa, Rodh, Andhli and Vatark. Sabarmati, being the principal river, is almost identical to the region. The river originates from the Aravalli Range in Udaipur District and joins the Gulf of Khambhat in Dholka taluka. It forms the eastern boundary of the district while flowing from North-East to South-West direction. The Vatrak River joins the Sabarmati River in the Dholka taluka too. The Khari River and the Meshwo River flow in the Daskroi taluka. The Bhogavo River, along with its tributaries Chatori and Omkar, flows through the Dholka and Dhandhuka talukas. The Bhadar River drains parts of Dhandhuka. The Rodh River flows through both Sanand and Dholka talukas, while the Shelwa and Andhli rivers are specific to Dholka. Notably, the Viramgam taluka has no rivers or streams flowing through it.

The Ahmedabad district has numerous traditional water bodies, which primarily consist of lakes and step wells, e.g. Kankaria Lake, Vastrapur Lake and Naroda Lake, step wells such as Ambe Mata ni Vav in Malav Talav and Bai Harir ni Vav at Asarwa. These water bodies are instrumental in recharging the underground aquifers and maintaining the rich diversity of aquatic plants and animals. Ignoring the hydrological features of a region while leading development can be detrimental to the ecological balance, economic structures, health and well-being of the people.

Over-exploitation of water in some parts of the district is resulting in the fast depletion of groundwater. There has been a sharp decline in the piezometric heads of deep confined aquifers. Phreatic aquifers are in need of urgent attention due to desaturation. With the growing needs of the district, it will be favourable to use systems like DEWAT (Decentralised Wastewater Treatment System), which treat the contaminated water and dispose of it for use again. It is important to rejuvenate the traditional water bodies that not only provide water but also bring solutions to problems like the urban island effect in the face of the global climate crisis.



Agriculture of Ahmedabad District

In the Ahmedabad district, farming is not just something people do. It's been a way of life for generations. The land is mostly flat, the weather is dry but manageable, and the soil is decent. That is why crops like cotton, groundnut, wheat, bajra and pulses have grown here for years. Most farmers don't have access to modern irrigation systems. They depend on rain, which is called dryland farming. If they are lucky, they get water from rivers like the Sabarmati during the monsoon. But often, especially in areas far from rivers, they have to rely on groundwater from wells or borewells.

In Dholka taluka of Ahmedabad, the fields stretch wide, and crops like cotton and wheat are common. In Detroj and Viramgam taluka, the major crops are groundnut, bajra and moong. Bavla and Sanand are changing fast, especially since Sanand has turned into an industrial zone with factories and warehouses popping up everywhere. Still, in the outer parts, you will find fields where people grow castor, mustard and cotton. Farmers here are trying to hang on, but the city is creeping in.

In Dhandhuka taluka, farming is a bit tougher because the soil has more salt in it, but farmers manage by growing crops that don't mind the salt, like bajra and cumin.

They also use old-style ponds and borewells to get by. Mandal taluka, though smaller, still plays its part with mustard and wheat, mostly depending on whatever rain comes. Farming is the main source of income, and during harvest season, the whole place region comes alive, with tractors moving, grains being dried and animals being fed. That is what keeps the rural economy alive.

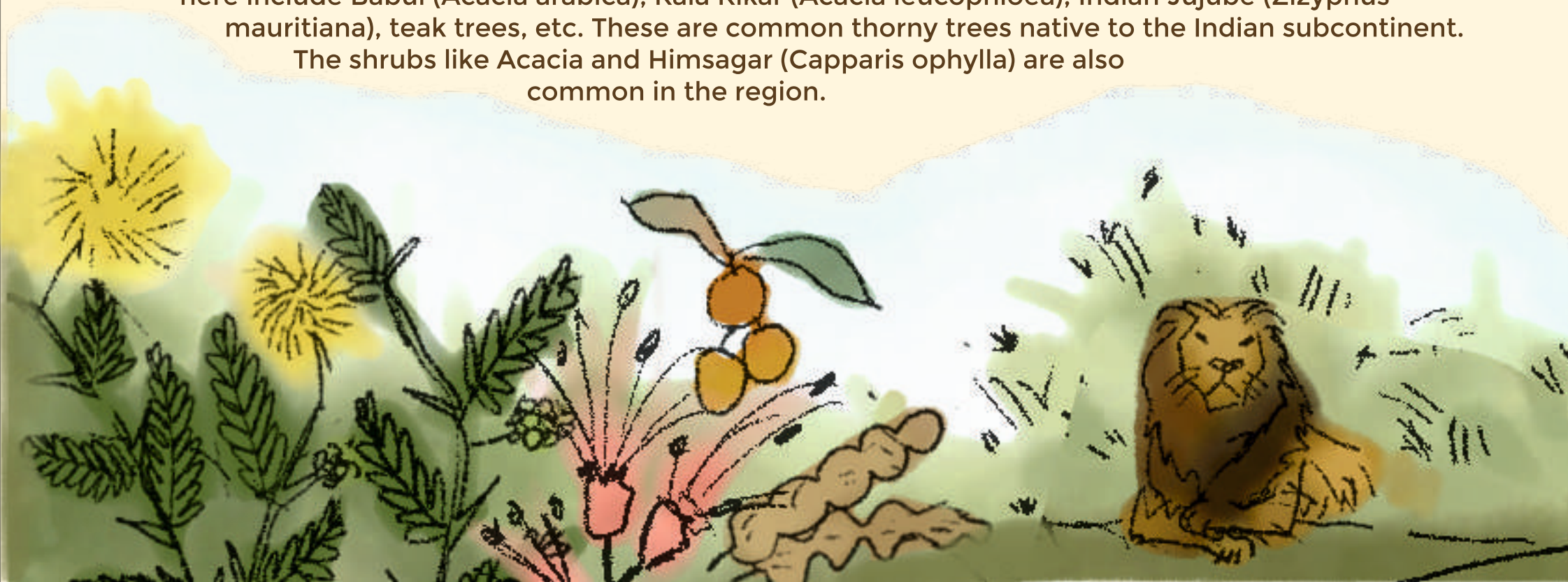
But with time, farming isn't what it used to be. Water is a big problem now. The borewells need to go deeper every year, and that is not cheap. Rain is all over the place, sometimes too much, sometimes not enough. On top of that, using chemicals for years has made the soil infertile.

Conventional methods like rotating crops, making compost or sharing water within the community aren't used much anymore. Most of the traditional water-saving methods, like bunds and check dams, are just memories now. Ahmedabad might be turning into a big district fast, but farming still matters a lot. It puts food on our plates, gives people jobs and keeps nature in check.

Ecology of Ahmedabad District

Gujarat is covered with different kinds of landforms that have given birth to multiple environments like grasslands, waterways, lakes, dry and deciduous forests, profuse vegetation, etc., that support a good and unique wildlife habitat. Similarly, Ahmedabad is blessed with a rich diversity of flora and fauna. The ecological balance is maintained through interconnected intricate systems like food chains, seed dispersal for various plants to thrive, and the creation of habitats for various animals, which is harmonious overall in nature.

Ahmedabad's ecology is characterised by a hot and semi-arid climate. The vegetation here is xerophytic because of the low availability of water. The plants adaptable to the dry conditions found here include Babul (Acacia arabica), Kala Kikar (Acacia leucophloea), Indian Jujube (Zizyphus mauritiana), teak trees, etc. These are common thorny trees native to the Indian subcontinent. The shrubs like Acacia and Himsagar (Capparis ophylla) are also common in the region.



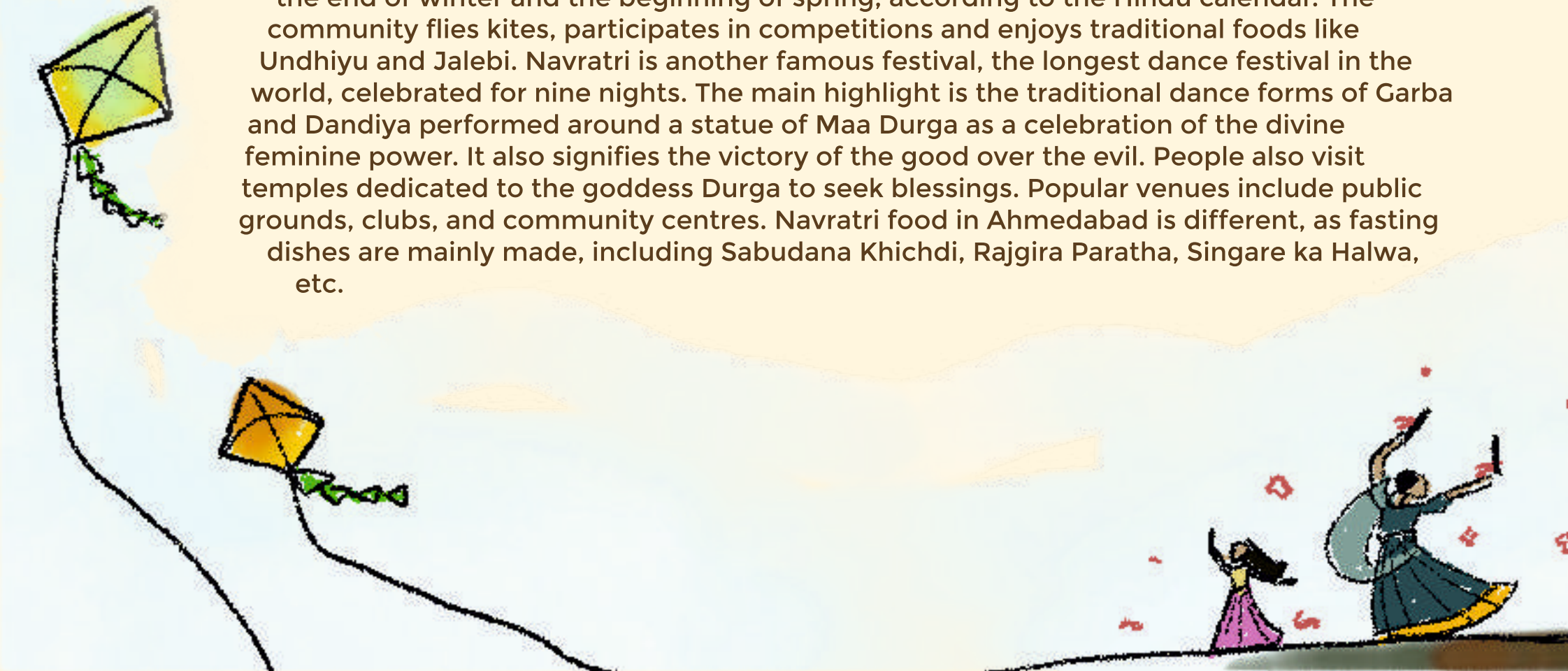
The region is known for its diverse birdlife, including migratory species. There are around 326 bird species in the district. Some of the popular species include the Asian Koel (Eudynamys Scolopaceus), Rose Ringed Parakeet (Psittacula Krameri), House Sparrow (Passer domesticus), Red-vented Bulbul (Pycnonotus cafer), Common Myna (Acridotheres tristis) etc. The district is also home to the majestic Asiatic Lion (Panthera leopersica), the pride of the state. Their numbers have steadily increased by 32% since 2020. Nilgai (Bosel tragocamelus) and Indian Wild Ass (Equus Hemionus Khur) are most commonly spotted too.

However, the district's ecology is facing challenges due to rapid urbanisation and indus trialisation, leading to wetland degradation and pollution. We need to take ecology into consideration with proper knowledge while starting any development project. We should take care of flora and fauna, which are at risk of extinction, to create a balance between people and the environment, which depend on each other. i.e. oxygen and other important resources provided by the plants and animals. Imbalance in the ecology will affect us gravely as we depend on them for our survival. If we make an effort to learn about the precious ecology, we can continue to enjoy Its care, which unites us all.

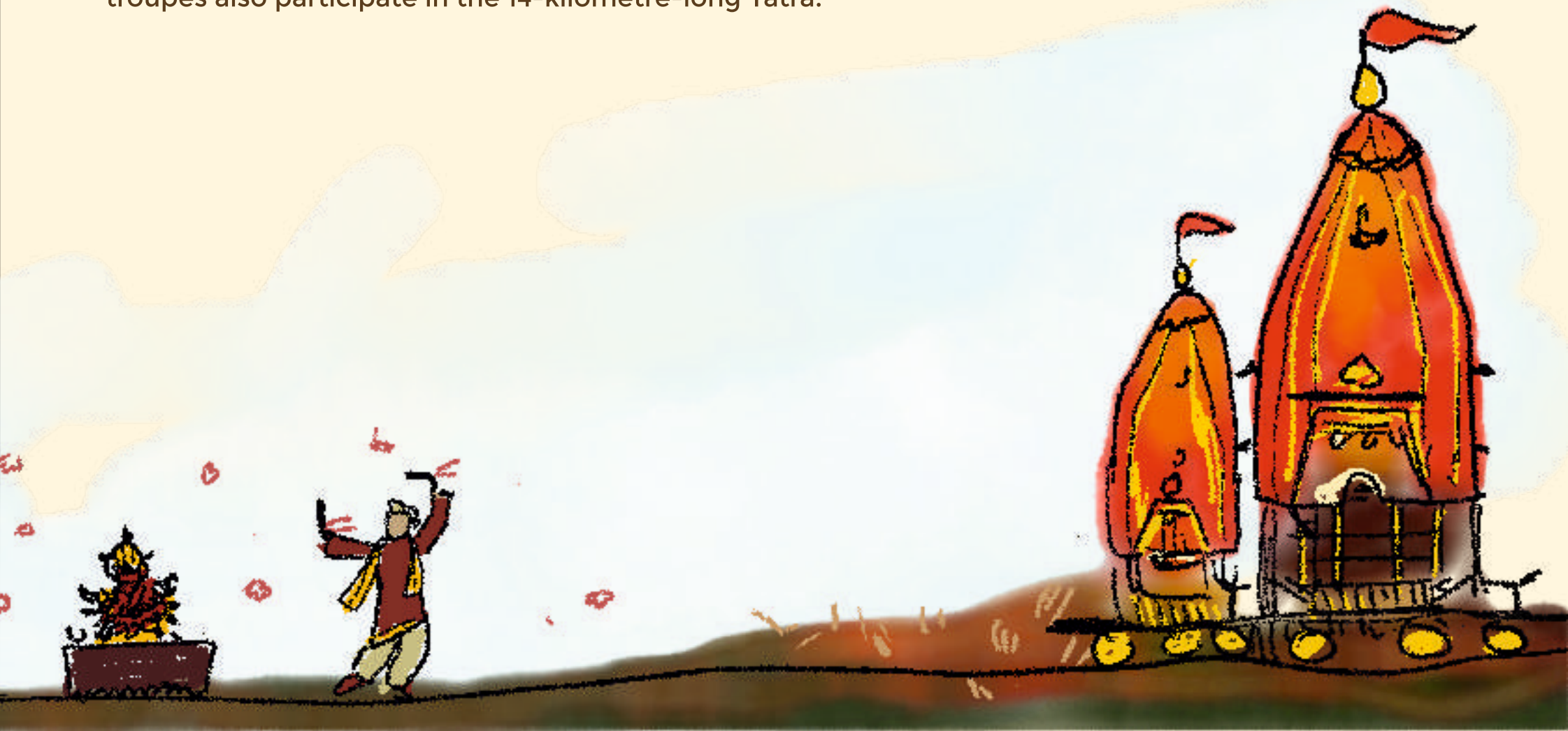
Culture of Ahmedabad District

A. Festivals

Ahmedabad district has a rich cultural heritage. It celebrates various festivals with great enthusiasm. The Uttarayan kite festival is celebrated yearly to mark the transition of the Sun's movement to the North, signifying the beginning of longer days. Uttarayan marks the end of winter and the beginning of spring, according to the Hindu calendar. The community flies kites, participates in competitions and enjoys traditional foods like Undhiyu and Jalebi. Navratri is another famous festival, the longest dance festival in the world, celebrated for nine nights. The main highlight is the traditional dance forms of Garba and Dandiya performed around a statue of Maa Durga as a celebration of the divine feminine power. It also signifies the victory of the good over the evil. People also visit temples dedicated to the goddess Durga to seek blessings. Popular venues include public grounds, clubs, and community centres. Navratri food in Ahmedabad is different, as fasting dishes are mainly made, including Sabudana Khichdi, Rajgira Paratha, Singare ka Halwa, etc.



Eid-ul-Fitr is celebrated with much joy, too, as it marks the end of the holy month of Ramadan. The Muslims gather in mosques to pray the namaz, and community gatherings are held. The main venues in Ahmedabad for namaz are the Jama Masjid in the old city and the Sarkhej Roza.
Rath Yatra is another Hindu festival celebrated in Ahmedabad annually since 1878. The festival celebrates Jagannath, Balarama and Subhadra. The procession has chariots made from coconut wood by devotees from the Khalas community of Bharuch. After the Mangal Aarti at dawn, the minister of Gujarat performs the Pahind Vidhi ritual, in which the symbolic cleaning of the path of Rath Yatra is carried out, after which the procession begins. Akharas, elephants, decorated trucks and troupes also participate in the 14-kilometre-long Yatra.



B. Food

Ahmedabad's food culture contains staples like Jalebi, Fafda, Khaman, Undhiyu, Dhokla, Dabeli, etc., and also lesser-known dishes like Khichu, Patra and Gunda nu Shaak. These dishes don't stand alone and are related to other climatic and economic factors of Ahmedabad as well.
Gujarat's climate, like Madhya Pradesh, Karnataka, and Rajasthan, is best suited for crops like Bengal gram, which is why there is an abundance of gram flour in traditional Gujarati cuisine. Its production in the state is usually around 11 lakh tonnes per year, making it a major producer in India. The cultivation of Bengal gram provides employment and income to farmers and other food-related industries, hence supporting local economies. The different festivals in Ahmedabad call for different dishes. On Diwali, fried sweets like Jalebi and Ghari are popular, while on Navratri, a vegetarian thali along with khichu (a savoury rice and lentil porridge) and dahi is made, considering the fasting rituals.

Gujarat has always needed to preserve food for extended periods due to seasonal variations like unpredictable rains. Hence, various methods like drying, salting and pickling were adopted by the local communities to preserve their food. One major method for increasing the shelf life was frying, which is still used in traditional Amdavadi cuisine. This is reflected in the modern-day street food culture, as Fafda-Jalebi, Bhajjiyas and Gathiya are fried foods that remain people's favourites. Several food festivals are celebrated in Ahmedabad to preserve the traditional recipes that have been passed down from generation to generation. One of them is the Sattvik traditional food festival, conducted every year in December, which highlights forgotten traditional recipes and lesser-known ingredients. Its main objective is to popularise minor millets for public consumption and to let people know about the recipes made from forgotten grains such as Kodra, Samo, Bajri, Jowar, Maize, etc.

C. Heritage

Ahmedabad was declared the first world heritage city in India. Many heritage sites adorn Ahmedabad and enhance its historical importance.
The stepwells were once integral to the semi-arid regions of Gujarat, as they provided water for drinking, washing, and bathing. Major examples of step wells in Ahmedabad are the Dada Harir ni Vav and the Adalaj step well. They served not only as water sources but also as places for social gatherings and trade route resting spots.

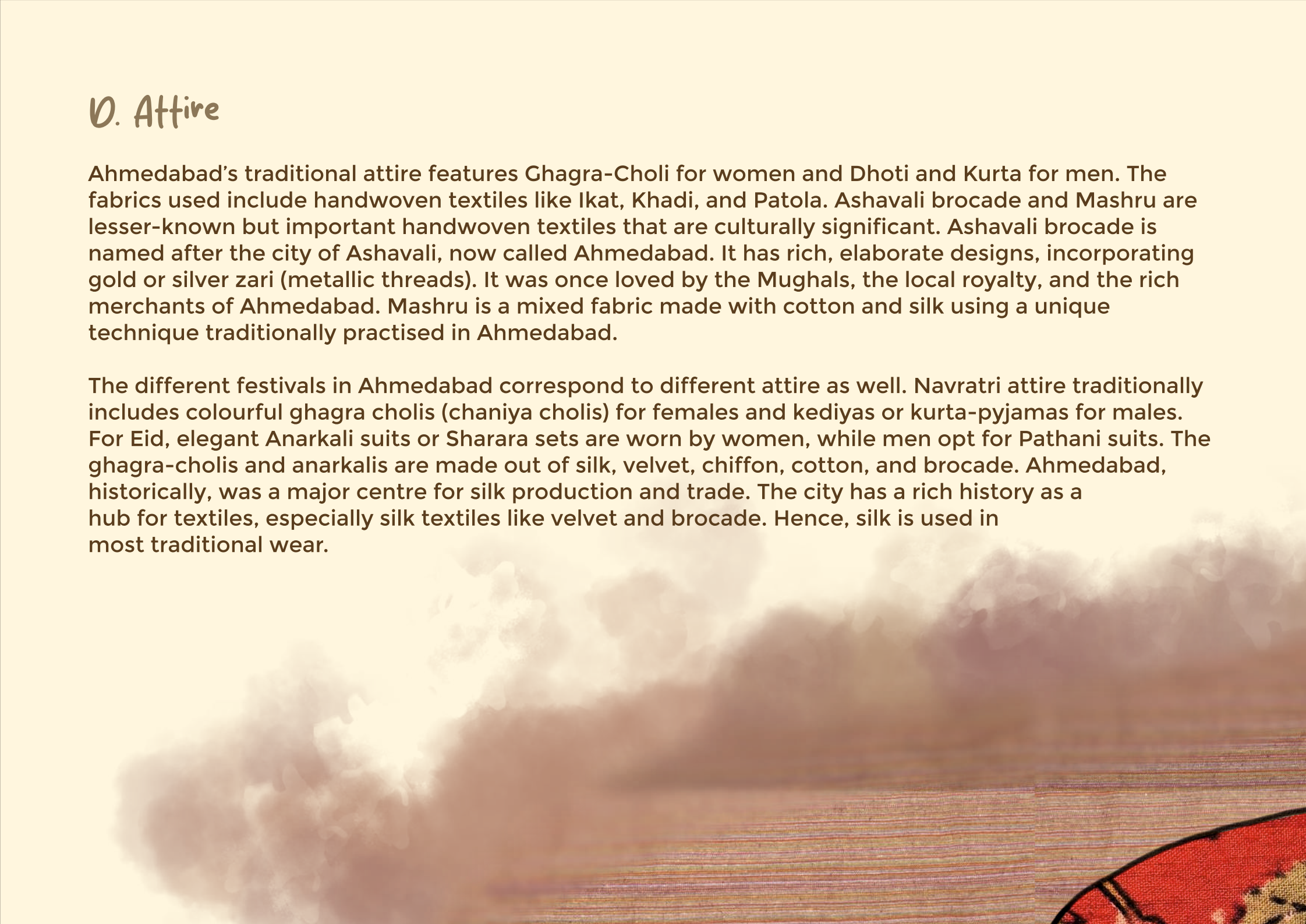
Some of the major mosques in Ahmedabad, like Jama Masjid, Rani Rupmati Mosque, Sidi Bashir Mosque, etc., still play an important role culturally, serving as centres for Islamic learning and cultural exchange. They become symbols of identity landmarks, reflecting the city's history.

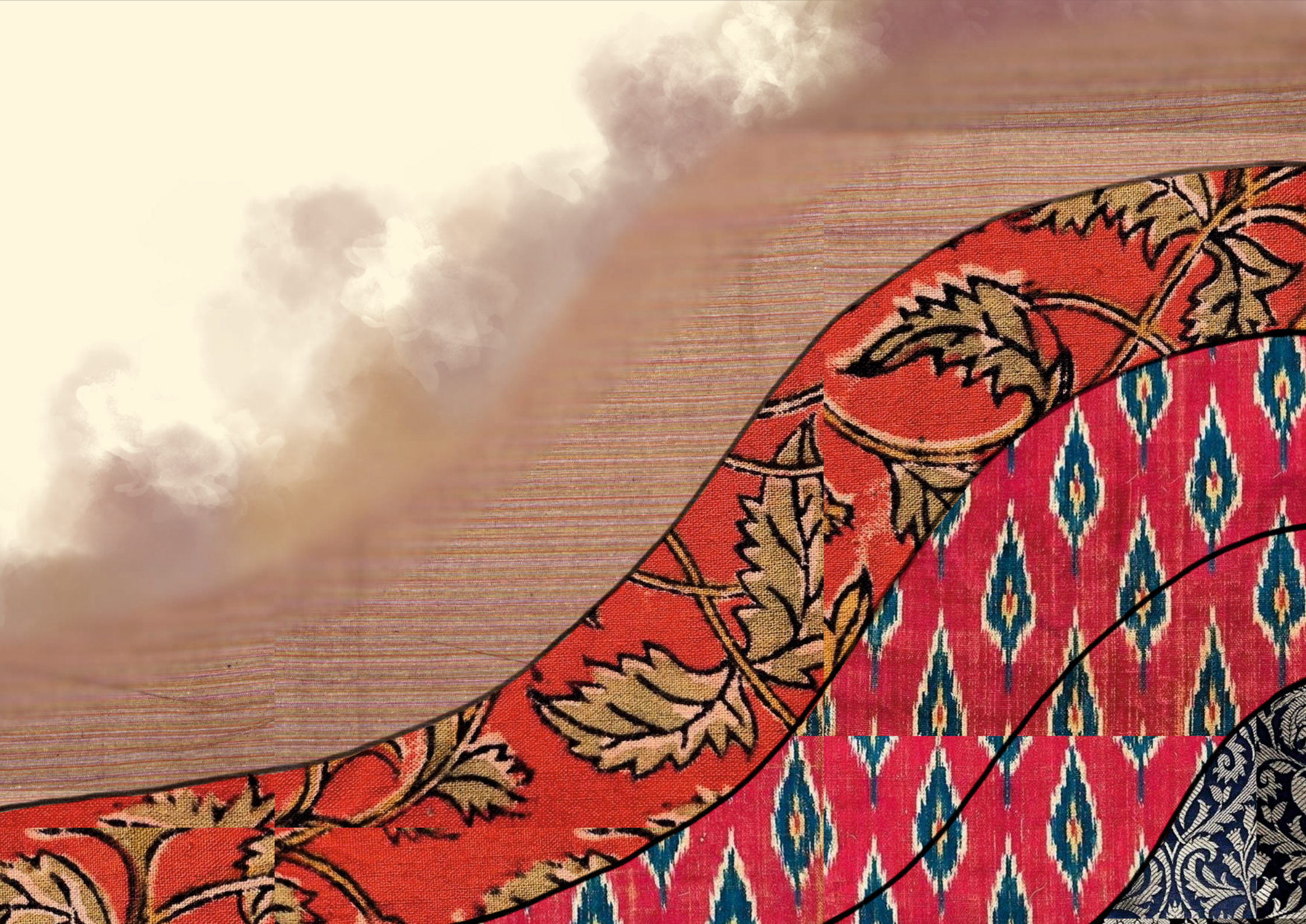
Major temples include the Swaminarayan temple, the Modhera sun temple, the Vaishnav Devi temple, and the Akshardham temple. They act as religious places of worship and connect people, but they also have an economic aspect. The Pilgrimages and festivals connected to the temples generate revenue for the local economy, supporting businesses like shops selling religious items, etc.

D. Attire

Ahmedabad's traditional attire features Ghagra-Choli for women and Dhoti and Kurta for men. The fabrics used include handwoven textiles like Ikat, Khadi, and Patola. Ashavali brocade and Mashru are lesser-known but important handwoven textiles that are culturally significant. Ashavali brocade is named after the city of Ashavali, now called Ahmedabad. It has rich, elaborate designs, incorporating gold or silver zari (metallic threads). It was once loved by the Mughals, the local royalty, and the rich merchants of Ahmedabad. Mashru is a mixed fabric made with cotton and silk using a unique technique traditionally practised in Ahmedabad.

The different festivals in Ahmedabad correspond to different attire as well. Navratri attire traditionally includes colourful ghagra cholis (chaniya cholis) for females and kediyas or kurta-pyjamas for males. For Eid, elegant Anarkali suits or Sharara sets are worn by women, while men opt for Pathani suits. The ghagra-cholis and anarkalis are made out of silk, velvet, chiffon, cotton, and brocade. Ahmedabad, historically, was a major centre for silk production and trade. The city has a rich history as a hub for textiles, especially silk textiles like velvet and brocade. Hence, silk is used in most traditional wear.





Socio-Economy of Ahmedabad District

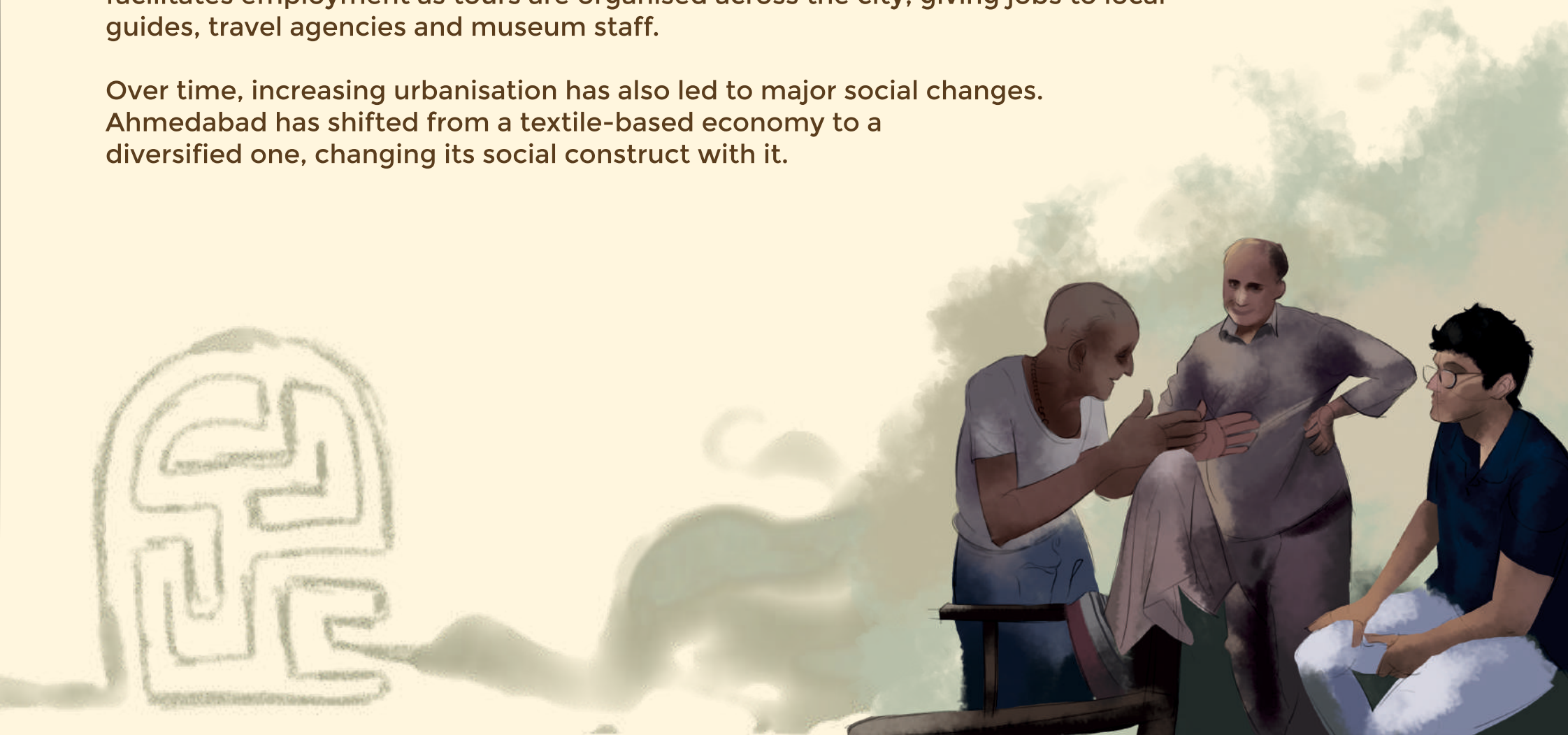
Ahmedabad was ruled by the Mughals, the Marathas and the British. It has been a centre for trade for centuries and is now a major industrial centre of India.

Gujarat's political decline due to the Britishers' possession of it led to the establishment of the first cotton mills in Ahmedabad. The city flourished as a major textile producer in the late 19th and early 20th centuries. Its development of mills, reliance on cotton and favourable climatic conditions led to it being named the 'Manchester of India'. Ahmedabad's location on the banks of the Sabarmati River and its proximity to cotton-growing regions made it an ideal location for the textile industry. The availability of labour, raw materials and economic support from local businessmen further fuelled its growth. The industry created jobs and supported local economies, shaping Ahmedabad's development. Textiles are still a significant part of Ahmedabad's economy and culture. The city still produces a wide range of textiles, such as cotton, denim, etc.

As Ahmedabad continues its journey towards modernism, its social construct has changed significantly. The expansion of new areas in Ahmedabad has led to modern infrastructure and new housing systems, which have attracted some residents away from Pols. Traditional Pol Houses, with narrow streets and courtyard designs, were once the heart of Ahmedabad's social life, giving a sense of community and security. Strong bonds and interconnectedness, which prevailed in Pols, are now becoming less prevalent as families move to newer areas to form new social networks.

After being declared India's first UNESCO World Heritage City, Ahmedabad's social and economic conditions have changed immensely. Tourism is a major revenue-generating factor, as the UNESCO listing has made people aware of Ahmedabad's rich history and architecture. This has boosted the tourism sector, with hotels, restaurants and local businesses benefiting from increased visitors. The listing also attracted various investments in real estate, hospitality, etc. Heritage tourism facilitates employment as tours are organised across the city, giving jobs to local guides, travel agencies and museum staff.

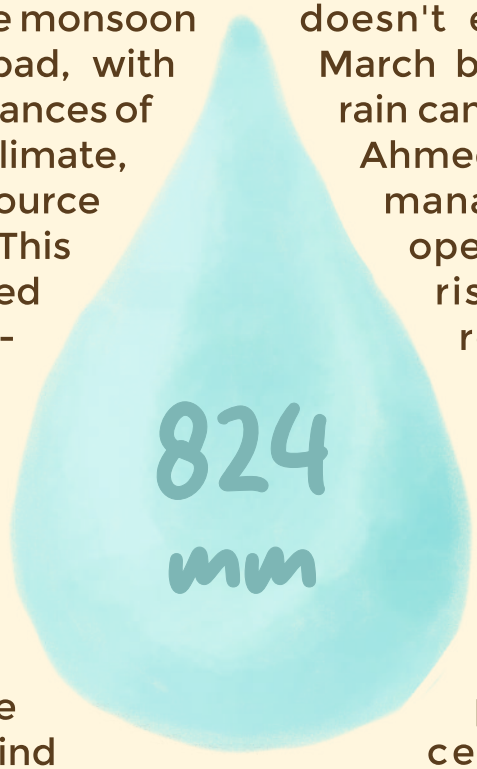
Over time, increasing urbanisation has also led to major social changes. Ahmedabad has shifted from a textile-based economy to a diversified one, changing its social construct with it.



Climate of Ahmedabad District

Ahmedabad has a hot semi-arid climate, characterised by hot and dry conditions, except during the monsoon season. The temperatures can reach very high during the summer months with low humidity, while the monsoon season brings a humid climate.

The city receives an average annual rainfall of about 824 mm (2010-2019), but heavy rains can cause flooding, and droughts can occur when the monsoon doesn't extend as far west as usual. The summers are generally dry in Ahmedabad, with March being the driest and May being the wettest (rain increasing from June). The chances of rain can only be dependent on the monsoon season. Facing a scorching hot semi-arid climate, Ahmedabad has unique challenges and opportunities for urban planning and resource management that influence the city's environment, infrastructure and daily life. This opens up strategies to address heat stress, water scarcity and climate-related risks. It requires plans like green spaces, reflective surfaces and climate-responsive architecture. The city relies heavily on water management systems like step wells and other traditional water harvesting techniques. These techniques are being revitalised to replenish groundwater reserves and ensure water security.



The post-monsoon season is characterised by generally dry and pleasant weather with a constant decrease in mean temperatures. With the retreat of the Southwest monsoon, the wind is Northerly to Northeasterly. Temperature decreases steeply after 1 hour IST at night.

The climate also shapes cultural practices, including traditional building designs that incorporate passive cooling techniques like central courtyards and strategic openings. If we ignore the climatic conditions of Ahmedabad while developing anything, we will be prone to the dangers of the extreme temperatures during summer.

Icons

Cultural

Religious sites


-Mosque


-temple


-Jain Derasar


-Swaminarayan Temple

Food


-Khaman

Festivals


-Uttarayan


-Diwali


-Paryushan

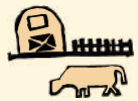

-Rath Yatra


-Janmashtmi

Agriculture

Farms


-Dairy Farm


-Livestock Farm


-Poultry Farm

Crops


-Vegetables


-Groundnut


-Fruits


-Sesame


-Paddy


-Castor


-Wheat


-Cotton

Ecological

Fauna


-Chequered Keelback Snake


-Indian Flapshell Turtle


-Greater Flamingo


-Bengal monitor Lizard


-Nilgai


-Bengal Fox


-Golden Jackal

Flora


-Baniyan


-Indian Rosewood


-Mango


-Neem Tree


-Pearl millet


-Laburnum


-Lemon grass

Economical


-Acacia sap


-Indian acalypha


-Prickly chaff flower


-Coral tree


-Peepal

Industry


-Textile


-Engineering

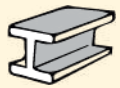

-Pharmeceuticals


-E-commerce


-Petrochemicals


-Chemicals


-Automotive


-Steel

Geo-Cultural Map of Ahmedabad District

India's geocultural regions

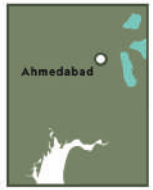
DISTRICT OF AHMEDABAD

Population: 7,214,225

Area: 8,087 km²

- Wetland
- Water body
- Forested area
- Crops
- Bare land
- Urban area
- DHOLKA Taluka
- Dolka Other city
- Gram Crops
- Neem Notable flora
- Steel Major industries
- Major festival
- Religious site
- Heritage site

Geology



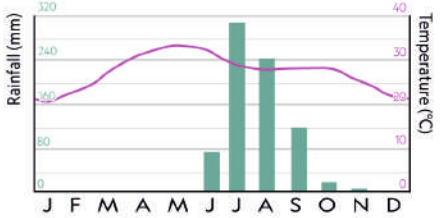
- Cretaceous and jurassic
- Quaternary

Vegetation

Dry deciduous forests: parts of Sanand, Viramgam
Scrub / open jungle: Mandal, Bavla, Viramgam
Plantation / Social forestry: Most of the district
Salt-tolerant forests: Dholera

Climate type: BSh

Average temperature: 27°C
Total rainfall: 757 mm



Click here to view features in isolation

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