

# Topography of Krishna River and its Tributaries

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**Abstract:** Krishna River, formerly Kistna, river of south-central India. One of India's longest rivers, it has a total course of about 800 miles (1,290 km). The river rises in western Maharashtra state in the Western Ghats range near the town of Mahabaleshwar, not far from the coast of the Arabian Sea. It flows east to Wai and then in a generally southeasterly direction past Sangli to the border of Karnataka state. There the river turns east and flows in an irregular course across north-central Karnataka and then to the southeast and into southwestern Telangana state. It then veers southeast and then northeast, forming a portion of the border with Andhra Pradesh state. Turning east it flows into Andhra Pradesh to its delta head at Vijayawada, and from there flows southeast and then south until it enters the Bay of Bengal. The Krishna has a large and highly fertile delta continuous with that of the Godavari River to the northeast. Although it is not navigable, the Krishna provides water for irrigation; a weir at Vijayawada controls the flow of water into a system of canals in the delta. Because it is fed by seasonal monsoon rains, the river's flow undergoes great fluctuation during the year, limiting its usefulness for irrigation. The two largest tributaries are the Bhima (north) and the Tungabhadra (south). The latter has a dam at Hospet, completed in 1957, forming a reservoir and supplying hydroelectric power. Other hydroelectric installations along the river include those along the Telangana-Andhra Pradesh border at Srisailem and Nagarjuna Sagar. The Krishna River has its origin at Mahabaleswar in the vicinity of Jor village in the state of Maharashtra. The Jor Village is situated to the farthest north of the Wai Taluka in the west. The river ultimately pours into the Bay of Bengal at Hamsaladeevi in Andhra Pradesh, on the eastern shorelines of India. The river bears the name of Lord Krishna- the beloved lord who is worshiped all around the country. A common saying in Marathi which translates into "quiet and slow flows Krishna" is ironic to the mighty Krishna river. States like Maharashtra, Karnataka, Telangana and Andhra Pradesh are blessed to have the Krishna river which provides water for irrigation. Especially in the case of Maharashtra, the river Krishna has a rich cultural and religious significance. It is due to river Krishna that agriculture and economy thrive in the districts of Satara, Sangli and

**Kolhapur.** The river Krishna is an eastern flowing peninsular river and is the fourth largest river in India. The river basin formed is triangular in shape and receives most of its rainfall during the south-west monsoon. The riverbank is lined with ghats along the stretch of the river. It was believed that Lord Rama and Goddess Sita once inhabited it during their fourteen years of exile.

**Key Words:** Mahabaleshwar, Hamsaladeevi, Deccan plateau, Rice Granary of India, Nagarjuna Sagar, Jor village.

## OBJECTIVES

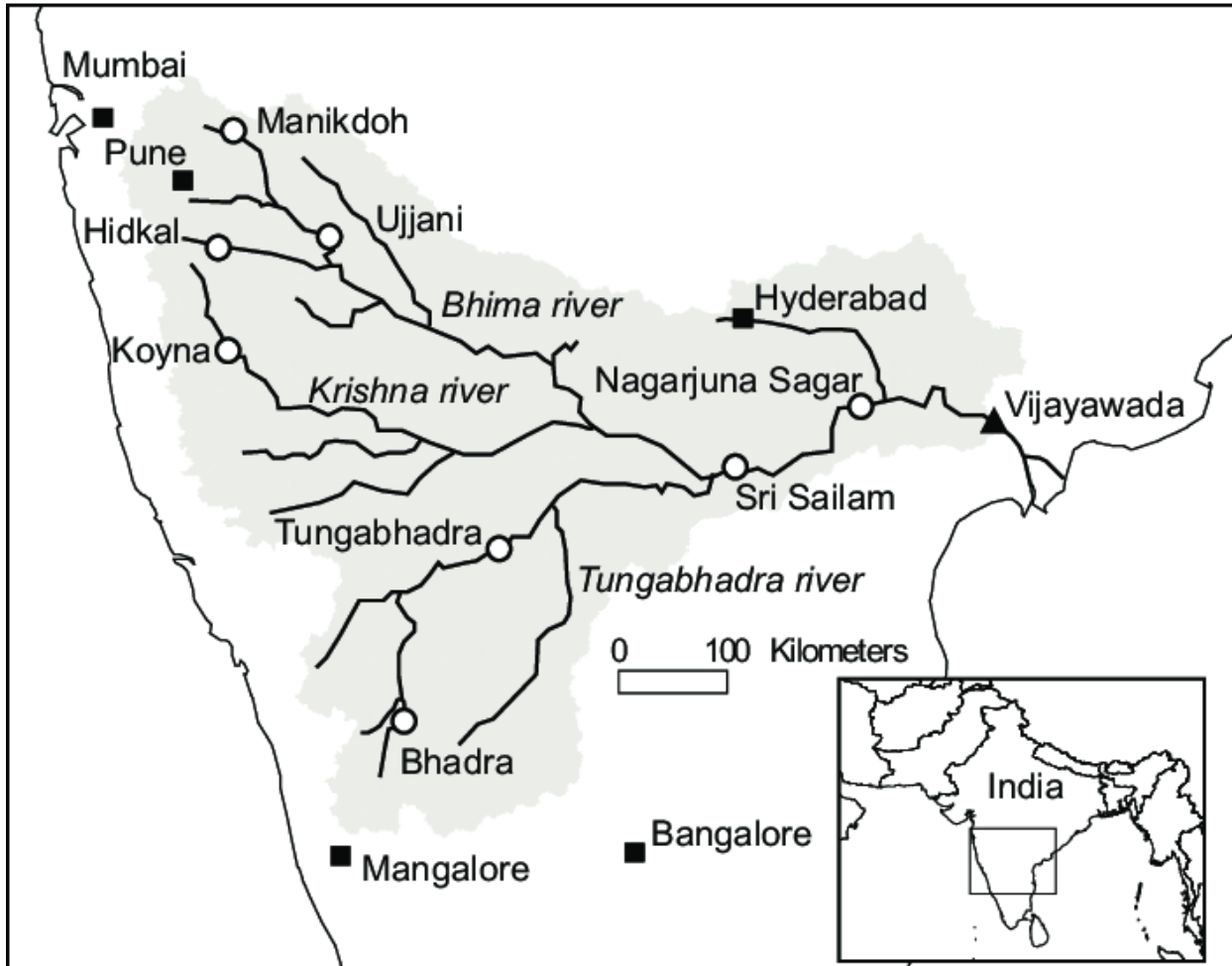
- To document the Godavari river and its tributaries
- To assess the topographical features of tributaries
- To analyse the significance of rivers in relation to civilization
- To provide information for further research

## INTRODUCTION

The Krishna River is a river in the Deccan plateau and is the third-longest river in India, after the Ganges and Godavari. It is also the fourth-largest in terms of water inflows and river basin area in India, after the Ganges, Indus and Godavari. The river, also called Krishnaveni, is 1,400 kilometres (870 mi) long and its length in Maharashtra is 282 kilometres. It is a major source of irrigation in the Indian states of Maharashtra, Karnataka, Telangana and Andhra Pradesh. The Krishna Basin extends over an area of 258,948 km<sup>2</sup> (99,980 sq mi) which is nearly 8% of the total geographical area of the country. This large basin lies in the states of Karnataka (113,271 km<sup>2</sup>), Telangana, Andhra Pradesh (76,252 km<sup>2</sup>) and Maharashtra (69,425 km<sup>2</sup>). It is the fifth largest basin in India. Most of this basin comprises rolling and undulating country, except for the western border, which is formed by an unbroken line of the Western Ghats. The important soil types found in the basin are black soils, red soils, laterite and lateritic soils, alluvium, mixed soils, red

and black soils and saline and alkaline soils. An average annual surface water potential of 78.1 km<sup>3</sup> has been assessed in this basin. Out of this, 58.0 km<sup>3</sup> is utilizable water. Culturable area in the basin is about 203,000 km<sup>2</sup> (78,000 sq mi), which is 10.4% of the total cultivable area of the country. As the water availability in the Krishna river was becoming inadequate to meet the water demand, Godavari River

is linked to the Krishna river by commissioning the Polavaram right bank canal with the help of Pattiseema lift scheme in the year 2015 to augment water availability to the Prakasam Barrage in Andhra Pradesh. The irrigation canals of Prakasam Barrage form part of National Waterway 4. The Krishna-Godavari delta is known as "Rice Granary of India."



Source: ResearchGate

The Krishna Basin extends over Andhra Pradesh, Maharashtra and Karnataka having a total area of 2,58,948 Sq.km which is nearly 8% of the total geographical area of the country. The basin has a maximum length and width of about 701 km and 672 km and lies between 73°17' to 81°9' east longitudes and 13°10' to 19°22' north latitudes. It is bounded by Balaghat range on the north, by the Eastern Ghats on the south and the east and by the Western Ghats on the west. The Krishna River rises from the Western Ghats near Jor village of Satara district of Maharashtra at an

altitude of 1,337 m just north of Mahabaleshwar. The total length of river from origin to its outfall into the Bay of Bengal is 1,400 km. Its principal tributaries joining from right are the Ghatprabha, the Malprabha and the Tungabhadra whereas those joining from left are the Bhima, the Musi and the Munneru are joining the river from left. The major part of the basin is covered with agricultural land accounting to 75.86% of the total area and 4.07% of the basin is covered by water bodies. The basin spreads over 56 parliamentary constituencies (2009) comprising 23 of Andhra

Pradesh, 18 of Karnataka, and 15 of Maharashtra. The Krishna has a large and highly fertile delta continuous with that of the Godavari River to the northeast. Although it is not navigable, the Krishna provides water for irrigation; a weir at Vijayawada controls the flow of water into a system of canals in the delta. Because it is fed by seasonal monsoon rains, the river's flow undergoes great fluctuation during the year, limiting its usefulness for irrigation. The two largest tributaries are the Bhima (north) and the Tungabhadra (south). The latter has a dam at Hospet, completed in 1957, forming a reservoir and supplying hydroelectric power. Other hydroelectric installations along the river include those along the Telangana–Andhra Pradesh border at Srisailem and Nagarjuna Sagar.

The Krishna River is originated near Mahabaleswar, which is located near Jor village in Maharashtra. The Jor Village is located in the far northwestern part of the Wai Taluka. The river eventually empties into the Bay of Bengal at Hamasaladeevi in Andhra Pradesh, on India's eastern coast. The river's delta is one of India's most productive areas. The prehistoric Ikshvaku and Satavahana sun kings reigned in this area as well. Wai is Maharashtra's oldest city, located on the Krishna River's banks in the Satara District. Sangli is the largest city on the banks of the river in Maharashtra, while Vijayawada is the largest city on the banks of the Krishna river in Andhra Pradesh. The Krishna River is one of the most environmentally damaging rivers because it causes extensive land corrosion during the monsoon season. The river has rapids and is quite raging, reaching depths of more than 75 feet (23 meters) on several occasions. In Maharashtra's Marathi language, there is a proverb that says "santh vaahate krishnamaai" which means "calmly runs Krishna" This phrase is also used to describe how a person should be as calm as Krishna. Nevertheless, between June and August, the river's flow causes a significant amount of corrosion. Krishna brings productive soil to the delta area from Karnataka, Maharashtra, and the western part of Andhra Pradesh during this time. The Tungabhadra River, which is the result of the union of two rivers - the Tunga River and the Bhadra River - is the river's most important tributary. The Western Ghat Mountain Ranges are the source of both of these rivers. From the right riverbanks, rivers like the Koyna, Venna, Panchganga, Vasna, Ghataprabha, Dudhganga, Tungabhadra, and Malaprabha meet Krishna. The

Musi River, Yerla River, Bhima River, and Maneru Rivers all meet the river on the left bank at the same time. Close to Sangli, three tributaries join the Krishna River. Haripur, which is also close to Sangli, is where the Warana River joins the river. Sangameshwar is another name for this area. At Narsobawadi, near Sangli, the Panchganga River joins the Krishna River. These locations are revered as sacred. Lord Dattatraya is said to have spent part of his life on the riverbanks of this river at Audumber. Sangameswaram is a popular Hindu religious centre in Andhra Pradesh's Kurnool district. The Bhavanasi and Tungabhadra rivers meet in this area, and Krishna is born. The Srisailem reservoir has submerged the Sangameswaram Temple. Pilgrims only visit this area to see this temple during the summer, when the reservoir's water level drops.

Book Review: Raj Kamat's book entitled " Study on the Pollution status of Krishna River," (2014) "The present study is an attempt to estimate pollution status and to suggest suitable measures to restore Krishna river water quality for the stretch Sangli to Haripur .The distance of the study stretch is approximately 4.2 km. This study was conducted for the period of eight months from September 2008 to April 2009. The guidelines published by the Central Pollution Control Board in 2007 were adopted for selection of monitoring stations and collection of water samples. The guidelines given by the American Public Health Association were adopted for analysis of water samples. For the assessment of the water quality parameters pH, DO, BOD, COD and Chlorides were analyzed in the study. The result indicates that except for the monsoon season, the river water quality deteriorated in the study stretch.The existing treatment facility for waste water is found inadequate. The suggested pollution control measures in the present study are essential to improve the river water quality in the stretch, Sangli to Haripur."

Religious Significance: River Krishna is sacred among the Hindus in India. The river is named in the name of Lord Krishna. It is believed that by taking the ritual dip in its water can purify all the past sins of human beings. The river is referred to as the Krishnaveni mata among the Hindus. There are many pilgrimage centers on the banks of the River Krishna including Mallikarjuna temple (Srisailem), Amareshwara

Swamy temple (Amaravati), Dattadeva temple, Sangameshwara Shiva temple, Ramling temple and Durga Malleshwara temple (Vijyawada). The center of attraction is the Krishna Pushkaram fair which is held one in twelve years on the banks of the Krishna river. The river bears the name of Lord Krishna- the beloved lord who is worshiped all around the country. A common saying in Marathi which translates into "quiet and slow flows Krishna " is ironic to the mighty Krishna river. States like Maharashtra, Karnataka, Telangana and Andhra Pradesh are blessed to have the Krishna river which provides water for irrigation. Especially in the case of Maharashtra, the river Krishna has a rich cultural and religious significance. It is due to river Krishna that agriculture and economy thrive in the districts of Satara, Sangli and Kolhapur. The river Krishna is an eastern flowing peninsular river and is the fourth largest river in India. The river basin formed is triangular in shape and receives most of its rainfall during the south-west monsoon. The riverbank is lined with ghats along the stretch of the river. It was believed that Lord Rama and Goddess Sita once inhabited it during their fourteen years of exile. Cultural and Spiritual Significance: In Maharashtra Krishna River is lined throughout its length by 'ghats'. Many temples were built on Ghats. Shortly after its origin Krishna river banks are beautified by Menawali ghat built on the river in 1780 during Peshwa rule. Today the place is a popular location for shooting Bollywood films. Sangli town which once was capital of Sangli, a small princely state has similar ghats. Mythology tells that this region was once inhabited by Rama and Seeta during their exile. Maharashtra's spiritual and mythological fabric is intimately woven with the early flows of Krishna and its tributaries like Koyna, Venna, Panchganga. Especially confluences of these tributaries with Krishna are marked by several small places of spiritual significance. While the general direction for Krishna' flow in Maharashtra is southward, there is only once when the Krishna travels Northwards for a very short length. That is at Pasarni village near Wai. This area is commemorated with the name 'Uttar Vahini' (North flow).

Origin: Krishna river originates in the western ghats near Mahabaleshwar at an elevation of about 1,300 meter, in the state of Maharashtra in central India. It is one of the longest rivers in India. The Krishna river is around 1,290 km in length. It flows through the states of Maharashtra, Karnataka and Andhra Pradesh before

merging in the Bay of Bengal at Hamasaladeevi in Andhra Pradesh. The principal tributaries of the Krishna River includes Koyna, Bhima, Mallaprabha, Ghataprabha, Yerla, Warna, Dindi, Musi, Tungabhadra and Dudhganga rivers. The river basin is approximately 200 meter deep. Krishna river is the oldest river in India.

Course of the river: The Krishna River originates in the Western Ghats near Mahabaleshwar at an elevation of about 1,300 metres (4,300 ft), in the state of Maharashtra in central India. From Mahabaleshwar it flows to the town of Wai and continues to travel east until it empties into the Bay of Bengal.[7] The Krishna River passes through the Indian states of Maharashtra, Karnataka, Andhra Pradesh, and Telangana. It is around 1,400 kilometres (870 mi) in length, of which 305 km (190 mi) flows in Maharashtra, 483 km (300 mi) in Karnataka and 612 km (380 mi) in Andhra Pradesh.

River Basin: Krishna River is one of the important east flowing peninsular rivers. It is the fourth largest river of India after Ganga, Godavari and Brahmaputra. The river rises from the Western Ghats near Jor village of Satara district of Maharashtra at an altitude of 1337 m just north of Mahabaleshwar and after traversing a length of 1400 km empties into the Bay of Bengal at Hamasaladeevi (near Koduru) in Andhra Pradesh. Krishna Basin occupies an area of 2,58,948 sq km which is nearly 8% of the total geographical area of the country. Largest part of the basin, nearly 44% lies in Karnataka. 26% of the basin falls in Maharashtra, about 15% in Telangana and another 15% in Andhra Pradesh. The basin is roughly triangular in shape and is bounded by Balaghat range on the North, by the Eastern Ghats on East & the South and by the Western Ghats on the west. Clusters of hills running to the East of Sahyadris range of Western Ghats mark the South Western Boundary of The basin. Boundary between the Krishna & Cauvery Basins is marked by DevarayanaDurga Forest- a small patch of 42.27km situated along the hill chains running across the Eastern part of Tumkur District of Karnataka. The interior of the basin is a plateau generally sloping eastwards. Basin receives 85% of its annual rainfall during the south-west monsoon. The rainfall, unevenly distributed, varies temporally and spatially across the basin. Upper reaches of Krishna Basin lie in the 25 Km

wide crest zone of Western Ghats which is the belt of heaviest rainfall region. Annual rainfall varies from 1000 to 3000 mm in this range. River further enters in the region falling in the rain shadow area of the Western Ghat which receives less than 600 mm annual rainfall. Rainfall gradually increases to about 900 mm towards the East coast. The average annual rainfall in the basin is 1096.92 mm.

The Krishna Basin extends over an area of 258,948 km<sup>2</sup> (99,980 sq mi) which is nearly 8% of the total geographical area of the country. This large basin lies in the states of Karnataka (113,271 km<sup>2</sup>), Telangana, Andhra Pradesh (76,252 km<sup>2</sup>) and Maharashtra (69,425 km<sup>2</sup>). It is the fifth largest basin in India. Most of this basin comprises rolling and undulating country, except for the western border, which is formed by an unbroken line of the Western Ghats. The important soil types found in the basin are black soils, red soils, laterite and lateritic soils, alluvium, mixed soils, red and black soils and saline and alkaline soils. An average annual surface water potential of 78.1 km<sup>3</sup> has been assessed in this basin. Out of this, 58.0 km<sup>3</sup> is utilizable water. Culturable area in the basin is about 203,000 km<sup>2</sup> (78,000 sq mi), which is 10.4% of the total cultivable area of the country. As the water availability in the Krishna river was becoming inadequate to meet the water demand, Godavari River is linked to the Krishna river by commissioning the Polavaram right bank canal with the help of Pattiseema lift scheme in the year 2015 to augment water availability to the Prakasam Barrage in Andhra Pradesh. The irrigation canals of Prakasam Barrage form part of National Waterway 4. The Krishna-Godavari delta is known as "Rice Granary of India." Krishna River is one of the important east flowing peninsular rivers. It is the fourth largest river of India after Ganga, Godavari and Brahmaputra. The river rises from the Western Ghats near Jor village of Satara district of Maharashtra at an altitude of 1337 m just north of Mahabaleshwar and after traversing a length of 1400 km empties into the Bay of Bengal at Hamasaladeevi (near Koduru) in Andhra Pradesh. Krishna Basin occupies an area of 2,58,948 sqkm which is nearly 8% of the total geographical area of the country. Largest part of the basin, nearly 44% lies in Karnataka. 26% of the basin falls in Maharashtra, about 15% in Telangana and another 15% in Andhra Pradesh. The basin is roughly triangular in shape and is bounded by Balaghat range on the North, by the

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River Delta: The delta of the river is one of the productive regions in India. The area also housed the prehistoric Ikshvaku and Satavahana sun reign of kings. Wai is the oldest city on the riverbanks of Krishna in the Satara District of Maharashtra. The biggest city on the banks of the river in Maharashtra is Sangli and at the same time, the biggest city on the banks of the River In Andhra Pradesh is Vijayawada. The Krishna delta is situated between ~15o 42 to 16o 30 N and 80o 30 to 81o 15 E. with its head at Vijayawada. The delta area is about 6,322 sq kilometers. After cutting the Eastern Ghats the river forms a deltaic plain some 95-km. wide before its four distributaries debauch into the Bay of Bengal. The first channel of the river starts near AvaniGodda but the three main distributaries of the modern river splits into the Golumuttapaya, Nadimieru and Main channels. A dam [weir] at the head controls the flow within the deltaic plain. Vast amounts of material have been added during the past 50 years at the mouths of the distributaries with the formation of river mouth bars and barrier islands with associated back island lagoons. As the delta prograded these lagoons were infilled with finer grained sediments. From Vijayawada to the Bay the average slope is 20 cm./km. The delta itself has an area of ~4736 sq. Km. The Krishna Delta has large tracts of Mangrove Swamps

along the coast with maximum concentration surrounding the three main distributaries. The depositional feature of a practically three-sided shape at the mouth of a waterway debouching either in a lake or an ocean is called delta. The word delta, derived from the Greek letter, was first utilized by Greek antiquarian Herodotus for the three-sided depositional highlight at the mouth of the Nile River. Regardless of whether little or huge, pretty much every waterway structures delta. Broad deltaic plain framed by two huge east coast waterways, Krishna and Godavari in the territory of Andhra Pradesh and the adjoining regions of Bay of Bengal in which these streams release their water is known as Krishna Godavari Basin. The Krishna Godavari Basin is a demonstrated petroliferous bowl of mainland edge situated on the east shoreline of India. Its terrestrial part covers a zone of 15000 sq. km and the seaward part covers a territory of 25,000 sq. km up to 1000 m isobath. The bowl contains around 5 km thick dregs with a few patterns, going in age from Late Carboniferous to Pleistocene. The delta-shaped waterway Krishna and Godavari is the second biggest delta in India.

**Tributaries:** After originating the course of Krishna River in Maharashtra is generally south flowing. Tributaries like Koyna, Varna, Panchganga and Dodhganga flow eastward from slopes of Western Ghats to meet Krishna in Maharashtra State. The river takes an eastward turn after it enters Karnataka near Kurundwad after flowing a length of about 300 km. In Karnataka tributaries like Ghataprabha and Malaprabha meet Krishna River. Bhima which is the largest tributary of Krishna River flowing 861 kilometres through Maharashtra, Karnataka, and Telangana states, before confluence with the Krishna River at Kadlur (Raichur) in Karnataka. Near Kurnool in Andhra Pradesh the Krishna River is joined by another major tributary, Tungabhadra from the south, draining a major section of the Western Ghats in Karnataka. Smaller tributaries like Dindi, Musi, Palleru and Muneru draining the dry north-eastern parts of the basin join the river flowing through Telangana and Andhra Pradesh but do not add much water. After originating, the course of Krishna River in Maharashtra is generally south flowing. Tributaries like Koyna, Varna, Panchganga and Dodhganga flow eastward from slopes of Western Ghats to meet Krishna in Maharashtra State. The river takes an

eastward turn after it enters Karnataka near Kurundwad after flowing a length of about 300 km. In Karnataka tributaries like Ghataprabha and Malaprabha meet Krishna River. Bhima which is the largest tributary of Krishna River flowing 861 kilometres through Maharashtra, Karnataka, and Telangana states, before confluence with the Krishna River at Kadlur (Raichur) in Karnataka. Near Kurnool in Andhra Pradesh the Krishna River is joined by another major tributary, Tungabhadra from the south, draining a major section of the Western Ghats in Karnataka. Smaller tributaries like Dindi, Musi, Palleru and Muneru draining the dry north-eastern parts of the basin join the river flowing through Telangana and Andhra Pradesh but do not add much water. Table below gives length of major tributaries-

**Bhima:** Bhima River originates in Bhimashankar hills near Karjat in Maharashtra and flows southeast for 861 km through Maharashtra, Karnataka, Andhra Pradesh states. Bhima is a major tributary of the Krishna River. Its banks are densely populated and form a fertile agricultural area. During its 861 kilometer journey, many smaller rivers flow into it. Kundali River, Kumandala River, Ghod river, Bhama, Indrayani River, Mula River, Mutha River and Pavna River are the major tributaries of this river around Pune. Of these Indrayani, Mula, Mutha and Pawana flow through Pune and Pimpri Chinchwad city limits. Chandani, Kamini, Moshi, Bori, Sina, Man, Bhogwati and Nira are the major tributaries of the river in Solapur. Of these Nira river meets with the Bhima in Narsingpur, in Malshiras taluka in Solapur district. The holy city of Pandharpur is on the bank of Bhima River.

**Dindi:** The Dindi (Telugu: దింది) is a river in Telangana. It is a tributary of the River Krishna, and includes the Dindi Reservoir. Dindi flows from Nalgonda, Telangana. This river enters into A.P. and enters into Bay of Bengal. Dindi Project is an existing Medium Irrigation Project constructed across River Dindi a tributary of Krishna River near Dindi (V) & (M), Nalgonda District. The Project was commenced during the year 1940 and completed in the year 1943 at a cost of Rs.34.36 Lakhs to irrigate an Ayacut of 12,835 acres. Dindi Reservoir is a medium water reservoir across the Dindi tributary of River Krishna

located near Dindi town in Telangana. It is part of Srisailem Left Bank Canal. This medium reservoir has 59 million cubic meters gross storage capacity. It is close to Nagarjunsagar-Srisailem Tiger Reserve, around 95 kilometers from Hyderabad.

**Doni:** The Doni river (Karnataka) flows eastwards from the area around Sangli in Maharashtra near Karnataka border and Most of its course is within North Karnataka in the districts of Belgaum, Bijapur and Kalaburagi. It joins Krishna to the southwest of the town of Talikote. It is a sub river of Krishna and its confluence with Krishna river is at Talikote. Sudden flash floods occur in the rainy season near Katnalli and Basavana Bagewadi. It is prone to irregular flooding. The water is not suitable for use even for washing.[2] Doni is a river which starts its flow from Maharashtra's Sangli District, later takes its route to Indi, Sindgi, Basavan Bagewadi and Muddebihal Taluks and merges later with Krishna River in the Gulbarga District of Karnataka. The river runs for say a very small distance of 150 kms and in Kannada it is known as HUCCHA HOLE (a mad river) and many people have lost their lives due to its erratic flow. The erratic way of its flow also is attributed to its being dry sometimes and suddenly turning to be overflowing with huge water which is a strange thing to note. The nearby cities to the Doni River are Bijapur, Athani.

**Dudhganga:** The Dudhganga (or Dudhganga, Doodhganga) is a right bank tributary river of the Krishna in western India. It rises in Kolhapur district of Maharashtra in the Western Ghats and flows eastward through Kolhapur district and Belgaum district in Karnataka before joining the Krishna. In parts of its course it forms part of the boundary between Karnataka and Maharashtra. The river is dammed to form the Kalamawadi reservoir in the west of Kolhapur district.

**Ghataprabha:** The Ghataprabha river is a tributary of the Krishna River and flows in the state of Karnataka, India. It originates in the Western Ghats at an altitude of 884 meters and flows eastward for a distance of 283 kilometers before its confluence with the Krishna River. The river basin is 8,829 square kilometers wide and stretches across Karnataka and Maharashtra states. The Hiranyakeshi River and the Markandeya River are

tributaries of the Ghataprabha. The Ghataprabha river rises in the Western Ghats and flows eastwards for a length of 283 km before joining the Krishna. The river debouches by 53 metres at Gokak Falls in Belgaum (Belagaavi) District. Belgaum district is located in the Northwest region of Karnataka State. The ancient name of the Belgaum was Venugrama (in Sanskrit) meaning village of Bamboos. Till 1961, Belgaum was a part of the Bombay state. With creation of states based on the languages, Belgaum was brought under Karnataka State. The languages spoken here are Kannada and Marathi. The Ghataprabha river is an important right-bank tributary of the Krishna River and flows eastward for a distance of 283 kilometers before its confluence with the Krishna River at Chikkasangam. The river basin is 8,829 square kilometers wide and stretches across Maharashtra and Karnataka states. The source of the river can be identified from Phatakawadi Lake  $15.939335^{\circ}\text{N}$   $74.059535^{\circ}\text{E}$ , at an elevation of 750 metres above mean sea level.

**Halia:**

**Kolamba:** Kolamba River basin is situated in Satara district of Maharashtra. Kolamba stream is 6th order stream. It has an area of about 88.69sq.km. It is located between latitude  $17^{\circ}15'\text{N}$  and  $17^{\circ}30'\text{N}$  and longitude  $74^{\circ}00'\text{E}$  and  $74^{\circ}15'\text{E}$  which is included in Survey of India topographic sheet no. 47 K/3 on the scale 1:50000. The Kolamba river basin has three sub basins which are Nigadi stream, Chikhali stream, Antavadi stream. First Nigadi and Chikhali stream meet each other near Masur, thereafter Kolamba River forms. Kolamba stream and Antavadi stream meet each other near Konegoan village. The maximum elevation of area is 898m and minimum elevation is 492m. Kolamba stream has a length of about 1.42km. The basin length (Lu) of Kolamba River is 20km. Stream flows from North-East (NE) to SouthWest (SW) direction. The climate of the area is wet and dry according to three seasons: summer, winter and Monsoon. During the monsoon, the area receives rain between June and October. In summer temperature varies from  $35^{\circ}\text{C}$  to  $45^{\circ}\text{C}$  and in winter it varies from  $10^{\circ}\text{C}$  to  $20^{\circ}\text{C}$ . It rises about 920 m above mean sea level. The present study area is divided into 3 zones like high ranges, intermontane valley and flood plains. High ranges include hills having elevation from 785m to 920m. Intermontane valleys are occupied by

colluviums formed by erosional processes. Flood plain with alluvial thickness more than 5m observed near village Konegaon. Black cotton soil is majorly observed in this area. At some places yellowish and brown colored soil is observed.

**Koyna:** The Koyna River (Marathi pronunciation: [ko:j(ə)na:]) is a tributary of the Krishna River which originates in Mahabaleshwar, Satara district, western Maharashtra, India. It rises near Mahabaleshwar, a famous hill station in the Western Ghats. Unlike most of the other rivers in Maharashtra which flow East-West direction, the Koyna river flows in North-South direction. The Koyna River is famous for the Koyna Dam and the Koyna Hydroelectric Project. Koyna Hydroelectric Project is the 2nd largest completed hydroelectric project in India. The reservoir – Shivasagar Lake, is a huge lake of 50 km in length. Due to its electricity generating potential through Koyna Hydroelectric Project, Koyna river is known as the LifeLine of Maharashtra. The river meets the Krishna River, which is one of the three largest rivers in southern India by Karad at Pritisangam. The river is just about 100 meters in width and is slow-flowing. It is an olive shade of green during the dry months and a bluish-brown in the monsoon months attributed to much algae and aquatic plant life. The impounded water of the Koyna Dam though has submerged a significant amount of Rain forest of the Western Ghats, it has helped a lot to the surrounding forest by supplying water all round the year. Hence a wide biodiversity of plants and animals is observed in the evergreen forest surrounding the river.

**Malaprabha:** Malaprabha River is another important tributary of Krishna River, which flows in Karnataka. It rises at Kanakumbi in the Belgaum district and joins Krishna River at Kudalasangama in Bagalkot district. It also flows through Dharwar District. Hubli city gets its drinking water from this reservoir. Tributaries of Malprabha: Bennihalla, Hirehalla and Tuparihalla are the major tributaries to Malaprabha. The Malaprabha river flows through Karnataka state. The Malaprabha river originates from Chorla ghats, which is a part of Western Ghats. It is a tributary river to the Krishna river and it flows through the Dharwad district. The Malaprabha river is an important river in north Karnataka. The ancient temple of Shri Mauli Devi, which is located at the origin of

the Malaprabha river, is a well known pilgrimage center in India. Badami, Pattadakal and Aihole temples, which are situated on the bank of Malaprabha river are famous in India. Some historical places are located on the bank of the Malaprabha river as well as in the vicinity of the river. The Malaprabha river originates in the Western Ghats, in the Kanakumbi village of Belgaum district at an altitude of 792 meters above the sea level. The Kanakumbi village is 16 km west of Jamboti village, Khanapur Taluka, Belgaum District in Karnataka state. The Malaprabha river flows first in east direction and then north-west, for almost 300 km and then it merges with Krishna river, at Kudala Sangama in Bagalkot district, Karnataka state. Merging of these two rivers is done at height of 488 meters from sea level. The Bennihalla, Tuparihalla and Hirehalla are the tributaries of the river. Including its tributaries, the Malaprabha river covers 11,549 Sq. km area. The catchment area of the river lies between 15° 00' and 16° 12' North latitude and 74° 14' and 76° 05' East longitude, in Karnataka state. The Malaprabha river flows from Kanakumbi, then Khanapur-Soundatti-Nargund-KudalSangam, before it merges with the Krishna river at Kudalasangama. The confluence of the Malaprabha river with the Krishna river is almost 304 km away from the origin of the Malaprabha river in Western Ghats.

**Munneru:** Munneru is a left tributary of the Krishna River. It originates in Warangal District of Telangana, India and flows in the districts of Khammam District and Krishna District. The river is named after Rishi Maudgalya, who is said to have created this river with his spiritual power and performed a penance ritual in Khammam. It flows through Dornakal Eru and comes via Kamanchkal to Danaivaigudam suburb of Khammam city where it has a small Dam in order to facilitate water collection. Munneru acts as a water source to Khammam city. It goes through ManchiKanti Nagar, Kalavoddu, Moti Nagar, Prakash Nagar and Dhamsalampuram suburbs of Khammam city. It reaches Chinna Mandava and Lingala villages of Krishna District. It flows into Penuganchiprolu town, Keesara village and finally discharges into the Krishna river at Eturu village near Nandigama downstream of Pulichintala dam. Muniyeru barrage was constructed in the year 1898 near Jaggayyapeta to supply irrigation water to 6,650 hectares of land.



Musi: Musi River is a tributary of Krishna River in the Deccan Plateau. It was known as Muchukunda River in earlier days. Hyderabad stands on the bank of this river which divides the city between the old and the new. The Purana Pul is the oldest bridge over the river in Hyderabad. Himayat Sagar and Osman Sagar are the two dams which are constructed over the river. The river originates in Ananthagiri Hills near Vikarabad. It rises in the Ananthagiri hill in Ranga Reddy district and flows into the Krishna at Vedapally in Nalgonda district. Until the early decades of the 20th century, the Musi River was the cause of flood devastation in Hyderabad. The Musi River is a tributary of Krishna River and streams in the Deccan Plateau district of Andhra Pradesh state in India. It courses through the fundamental locales in Hyderabad and divides the outstanding old city with the new city. Himayat Sagar and Osman Sagar are the two critical dams based on it, which is the principal wellspring of water in Hyderabad. Musi River is otherwise called Muchukunda River in past days. Hussain Sagar Lake was beside a tributary of the River Musi. It was a pool of 24 kilometers assembled to help the city. Taking the Musi River tour is an unquestionable requirement for guests who wish to know the Palembang of the past. Long back, the local populous in Palembang existed along this stream. Some even constructed their homes along the waterway banks. One can discover numerous visitor locales, for example Kemarau Island and sanctuaries. Neighborhood individuals depend on this stream for their transportation. You can see numerous speedboats (taxis) taking travelers to the next side of the stream.

Musi River is likewise known for its regular surge obliteration in the Hyderabad city work in the early years of the twentieth Century. On Tuesday 28th September 1908 Hyderabad encountered disastrous surges of the River Musi, streaking over the city. In one day, 17 inches of precipitation were recorded and the water level at Afzalgunj was around 11 feet (3.4 m) high and in some different places it was even higher. These surges disturbed the life of the individuals living in Hyderabad. The present day period of the advancement of the both urban communities started not long after these surges in AD 1908 in the Musi River. The requirement to arrange improvement of the city in a staged way. Musi River is additionally known by its name Muchukunda River

yet no one uses it now or they are cognizant of it as it was its old name. Musi River starts in Anantgiri Hills close to Vikarabad, Ranga Reddy region. From the beginning, it passes all the way through Darsi, Markapur, and the northern border of Kondepi, Podili, Tangutur, Koru Uppalapadu, Dondaleru, Gajjaleru, along with Atleru and at last joins Krishna waterway at Wazirabad within The Nalgonda region. It has an aggregate length of 250 kms and it passes through Hyderabad & Secunderabad twin city as well.

Paleru: Paleru is a tributary of the Krishna river which joins the main river near Mukteswarapuram in Jaggayyapeta mandal of Krishna district in Andhra Pradesh. During the Nizam rule, a reservoir was constructed on the river at Paleru village, Kusumanchi. Hundreds of acres are irrigated with the help of this reservoir. Paleru reservoir acts as a balancing reservoir to the Nagarjunasagar left canal.

Panchganga: From Kolhapur the Panchganga River, as the river is now called, winds east about thirty miles till it falls into the Krishna at Kurundvad. In the thirty miles of its course, to the east of Kolhapur the Panchganga River receives only one considerable stream the Hatkalangale or Kabnur which, rising from the Alta hills and passing Hatkalangale and Korochi joins the Panchganga near Kabnur about fifteen miles below Kolhapur. From Shirol to its junction with the Krishna near Narsobawadi, it has an extensive Alaviya floor bordered by the large worn out stumps of the Alta portion of the Panhala in the north and the Hupari part of the Phonda Sangaon range in the south. A characteristic feature of this basin is the contrast between the rounded worn out features locally known as Mals and the general entrenched nature of all the streams. A further noteworthy aspect is the deeply incised course of the Panchganga itself. From Mangaon, the river flows in a deep bed that is well below 40 feet from the surrounding plain. Further downstream it develops an incised meander-core which includes the Narsobawadi area. The valley of the Panchganga is reckoned the most fertile in Kolhapur and is famous for its hay. The bed of the river is shallow and its sloping banks yield rich crops during the cold weather. At Kolhapur the Panchganga is crossed by two beautiful bridges one near the Brahmपुरi hill on the north side of Kolhapur town on the road leading to the Amba pass, and the other a few

miles to the east on the Poona road. The Panchnaga and its feeders are affordable in the hot season. In the rainy season large and small boats ply at twenty-three fords. The waters of all the streams which join to form the Panchganga are much used for growing sugarcane. In October, towards the close of the south-west rains, a series of fair-weather earthen dams are built across the river beds and the water is raised by lifts worked by bullocks.

**Peddavagu:** Peddavagu basin, a tributary of Krishna River basin is located in the southern Telangana agricultural zone of the Mahabubnagar district of Andhra Pradesh, which has been prone to recurrent droughts in the last two decades. The basin is 1,611 square kilometers, and lies between 77° 48' 44.7" E to 78° 13' 31.55" E longitudes and 16° 19' 31.55" N to 16° 50' 22.1" N latitudes. The basin's topography is mostly flat with granitic hills in the upstream, and its climate transitions from a tropical to a subtropical climate. The climate of the study area is semi-arid with an average annual rainfall of 622 millimeters, received mainly during the monsoon period from June to October. Summers, which last from March to May, are hot, with temperatures ranging from 27 to 41.5 Celsius. The winter, which spans from November to January, has temperatures ranging from 16.9 to 19.1 Celsius. The main livelihood opportunities for rural communities in the Mahabubnagar district are agriculture and livestock rearing. This region has two major cropping seasons, viz, June-October (kharif) and November to March (rabi). The most important crop in the basin is rice during kharif and groundnut in rabi seasons. Other regularly cultivated crops include sorghum, pearl millet, finger millet, maize, groundnut, castor, sunflower, pigeon pea and vegetables.

**Tarali:** Tarali dam is situated in the Satara district of Maharashtra State across river Tarali, a tributary of river Krishna, located near village Dangistewadi in Taluka Patan. The purpose of this project is to utilize Tarali River water for irrigation. The project comprises a Concrete gravity dam of length 1096 m and maximum height 73.41 m with 5 numbers of radial gates of size 12 m x 5 m. Gross storage capacity of the dam is 165.70 Mm<sup>3</sup> and live storage is 165.462 Mm<sup>3</sup>.  
**Tungabhadra:** Most important tributary of Krishna River is the Tungabhadra River, which is formed by

the Tunga River and Bhadra River that originate in the Western Ghats. Tungbhadra flows in Karnataka and Andhra Pradesh. It was known as Pampa during the epic period. The name of famous tourist spot Hampi is derived from Pampa, which is the old name of the Tungabhadra River on whose banks the city is built. The Tunga and Bhadra Rivers rise at Gangamoola, in Varaha Parvatha in the Western Ghats forming parts of the Kudremukh Iron Ore Project, at an elevation of 1198 metres. Bhadra flows through Bhadravati city and is joined by numerous streams. At Koodli, a small town near Shimoga City, Karnataka, the two rivers meet and called with the common name Tungabhadra. From here, Thungabhadra meanders through the plains to a distance of 531 km (330 mi) and mingles with the Krishna at Gondimalla, near Mahaboobnagar in Andhra Pradesh. The Tungabhadra River is formed by the confluence of the Tunga River and the Bhadra River at Koodli which flow down the eastern slope of the Western Ghats in the state of Karnataka. The two rivers originate in Mudigere Taluk of Chikmagalur District of Karnataka along with the Nethravathi (west-flowing river, joining the Arabian Sea near Mangalore), the Tunga and the Bhadra rise at Gangamoola, in Varaha Parvatha in the Western Ghats at an elevation of 1458 metres (near Samse Village). According to a Hindu mythological legend, after killing the demon Hiranyaksha, Varaha Swamy (the third incarnation of Lord Vishnu) felt very tired. He took rest on the region now known as Varaha Parvatha. When He sat on that peak, sweat began flowing from his scalp. The sweat which flowed from the left side of his scalp became the Tunga river, and the sweat which flowed from his right side became the Bhadra River. After emerging from the source, the Bhadra river flows through Kudremukh mountain region, Tarikere Taluk and the industrial city of Bhadravathi, while the Tunga river flows through Sringeri Taluk, Thirthahalli Taluk and Shimoga Taluk. More than 100 tributaries, streams, creeks, rivulets and the like contribute to the two rivers. The journey of the Tunga and the Bhadra is 147 km (91 mi) and 171 km (106 mi) respectively, till they join at Koodli, at an elevation of about 560 metres near Holehonnur, about 15 km (9.3 mi) from Shivamogga, areca granary of the country. Though both Tunga and Bhadra rivers start at same source (Gangamoola), they flow separately for some distance and then they later unite with each other at Koodali village.

Hence from there, the composite name Tungabhadra was given. From there, the Tungabhadra meanders through the plains to a distance of 531 km (330 mi). After confluence, The mighty Tungabhadra river flows through Honnali and Harihara taluks of Davangere district. Then it flows through Harapanahalli, Hoovina Hadagali, Hagaribommanahalli, Hospet and Siruguppa Taluks of Bellary district. In Siruguppa Taluk of Bellary district, it receives its tributary Vedavathi River. The river forms a natural boundary between Bellary and Koppal districts and then between Bellary and Raichur districts along its course. After entering Andhra Pradesh, it flows through Mantralaya and then through Kurnool. It receives its tributary Handri river near Kurnool. Then it joins the Krishna near Gundimalla Village of Jogulamba Gadwal district of Telangana state. The confluence of Tungabhadra and Krishna River is a holy pilgrimage site- The Sangameswaram Temple. The Jogulamba Temple (dedicated to Goddesses Devi ) is present near Alampur village. The Sangameswaram Temple (Dedicated to Lord Shiva) is present in Kurnool District, Andhra Pradesh. The Varada flowing through Shimoga, Uttara Kannada and Haveri districts and Vedavathi in Chikkamagalur, Chitradurga and Bellary districts in Karnataka and the Handrail in Kurnool district of Andhra Pradesh are the main tributaries of the Tungabhadra. Many rivulets and streams join these tributaries. There is a popular saying in Kannada "Tunga Paana, Ganga Snana", which means "Drink Tunga River water, which is tasty & sweet, and bath in Ganga River, which is holy".

Urmodi: Satara Dist. of Maharashtra

Venna: The Venna River rises in Mahabaleshwar, and is a tributary of the Krishna River in Satara district of western Maharashtra, India. It rises near Mahabaleshwar, a famous hill station in the Western Ghats. The river meets the Krishna River and this confluence takes place at Sangam Mahuli which is located in the eastern part of Satara city. The River Krishna is one of the three largest rivers in southern India. Story of the origin of Venna River (Veni River) is associated with a curse by Goddess Saraswati. Legend has it that Brahma was ready to perform a yajna. Vishnu and Shiva arrived to witness the yajna. But Brahma could not start the yajna as his wife Saraswati did not turn up. As the auspicious time was passing over, at the instance of Shiva, Brahma started

the yajna with his second wife Gayatri. But soon Goddess Saraswati arrived at the yajna and got angry for not waiting for her. She cursed the gods present there to take the form of rivers. Thus Shiva was cursed by Goddess Saraswati to take the form of Veni River. Venna River rises in Mahabaleshwar in Satara District, Maharashtra, and is a tributary of the Krishna River. The river meets the Krishna River and this confluence takes place at Sangam Mahuli which is located in the eastern part of Satara city.

Yerla: The Yerla River, alternatively Yerala River, is a tributary of Krishna River. It originates from the Mhaskoba hills in the north of Khatav taluka of Satara district. It runs between Vardhangad and Mahimangad ranges and its total length is about 120 km. In Satara district, it passes through Mol, Lalgun, Pusegaon, Khatav, Vaduj and Nimsod. Later in Sangli district it joins Krishna River near Brahmanal. The Yerala is nonperennial river. This river is a major source of irrigation in the eastern part of Satara district and Sangli district in Maharashtra and helpful for seasonal agriculture production. The drainage network influences the economic and social development of people.

Warna: Warana River is a river that flows through the Warana river valley of Sangli and Kolhapur districts in the western Indian state of Maharashtra. It is an important tributary of the Krishna river. The river originates at a height of 914 m above sea level on Prachitgad near Patharpunj plateau in the Sahyadri mountain range. The river initially flows from northwest to southeast and then to the east. The river is about 1.5 km southwest of Sangli city, 584 m above sea level. Warana merges into Krishna river at Haripur near Sangli. The river Warana is 70 meters wide near the confluence and is prone to flooding. It has a course of 158.029 kms. The Warana Valley covers an area of 2,095 square Kilometers and is spread over eight talukas namely Shirala, Walva, Miraj, Shahuwadi, Panhala, Hatkanangale and Shirol. The Warana Valley extends between Sangli and Kolhapur districts and its latitudinal and linear extent extends between N '16047 to N' 17015 and E '73030' 15 " to E '74030' respectively. Kadvi and Morna are the major tributaries of Warana. Kadvi river in Kolhapur district originates in the Sahyadri mountains near Amba Ghat at an altitude of about 700 meters. The Kadvi river

flows almost parallel to the Warana river. She finds Potfugee, Ambardi, Anveer and Kandra as her main streams. About 35 km away, it meets the Warana near Sagav. When the river Kadvi is met, the flow of Warana becomes very wide. Morna is another important tributary of Warana in Sangli district. The river originates near Dhamwade hill. The river flows south and southeast. The length of this river is about 27 km. Morna valley boasts of a large number of Betel farms. The river Morna meets Warana near Mangle village in Shirala taluka. On the right, Kansa river is 20 km from Ud giri. It flows to Warana near Malewadi in Panhala taluka. Sharli and Ambardi were the other tributaries of Warana.

**Deteriorating Water Quality of Krishna River:** Krishna River along with its several tributaries features prominently in the Central Pollution Control Board's report of 2014-15 which identifies polluted stretches of rivers and prioritizes them for restoration. Throughout its course urban centres seem to play a major role in polluting the river. Maximum number of stretches is in Maharashtra. Of these 12 stretches 5 stretches with a total length 423 km are of Krishna and its tributaries. According to a report by the Planning Commission Satara accounts for the largest share and releases about 32.5 percent and 22.9 percent of wastewater and solid waste, respectively, followed by Karad. The stretch of the river from Karad to Sangli is highly polluted due to release of effluents, mainly from sugar industries and distilleries. According to the report in Sangli, Miraj and Kupwad about 99 percent of the sewage generated by the Municipal Councils and over 50 per cent of sewage discharged by Municipal Corporation totaling up to 48.645 MLD goes untreated. Effluents discharged into the river from many of the industries in Kolhapur and Sangli have a very high BOD load. Absence of solid waste management which was a neglected cause of pollution has now been identified a 'greater problem'.

**Forests and Biodiversity of Krishna Basin:** Krishna River during its course supports a large array of biodiversity. Especially the borders of the basin lined with Western & Eastern Ghats harbor various native species of plants, trees, birds and wild animals. Thick forested slopes of the Ghats are a home for Sahyadri Tiger Reserve. It is the first Tiger Reserve of Western Maharashtra and 4th Tiger Reserve of Maharashtra

State spreading over two Protected Areas those of the Koyana Sanctuary and Chandoli National Park of 741.22 sqkm and adjoining area in the landscape 424.34 sqkm, total of 1165.56 sqkm.[5] The area is spread over 4 districts namely, Satara, Sangli, Kolhapur and Ratnagiri. Sahyadri Tiger Reserve declared in January 2010 is home for wild fauna such as Tigers, Gaurs, Deer, Leopard cats, Panthers, Sloth bears, Barking deer, Mouse deer etc. Grassland of the basin in Solapur Dist. of Maharashtra is a home for Great Indian Bustard, the endangered bird species.

**Drainage Area:** The river Krishna has cultural and religious importance in the state of Maharashtra. The river provides for the agricultural economy in the state as it allows for water for irrigation for sugarcane production. Also, the weir at Vijayawada district distributes the water for irrigation and acts as the control system. The river has several dams and hydroelectric power project plants on it which harness the potential energy of the river. The presence of wildlife sanctuaries also helps in preserving flora and fauna in the Krishna basin system. A few famous sanctuaries and reserves include Nagarjuna Sagar-Srisailem tiger reserve and Krishna Wildlife sanctuary which is home to a number of migratory birds. The river basin also has rich mineral deposits of coal, oil, limestone, gold, uranium, diamond etc. in the deposits of Krishna Godavari Basin, Nalgonda, Kudremukh, Donimalai and Yellur. The seasonal rains feed the river during monsoon which increases the level and flow of the mighty Krishna river. The river witnesses an outstanding cultural and religious significance with diversity in language, lifestyle and food. The mighty river Krishna is the fourth-longest river in the country after Ganga, Godavari and Brahmaputra. It flows through four states, namely Maharashtra, Karnataka, Telangana and Andhra Pradesh. The river originating from the heights of Western ghats near Mahabaleshwar empties herself in Bay of Bengal in the state of Andhra Pradesh. The river Krishna hosts Krishna pushkaram fair which happens after every twelve years. It is believed that anyone who takes a bath in the river Krishna will have all of his sins washed away. The river has cultural and religious significance in the state of Maharashtra, where the river is perceived in a feminine form and is called "Krishna mai" which means Mother Krishna.

The river Krishna provides a lifeline to sugarcane producing districts like Satara, Sangli and Kolhapur. Sugarcane is a water-intensive crop and therefore has led to the drying of the Krishna river. The presence of sugarcane mills, refineries and power stations which release effluents in the river Krishna. It has led to an increase in the alkalinity levels of the water. Also, the river Krishna is no longer able to reach the sea due to degradation and overconsumption. The Krishna River traverses across peninsular India from west to east and on its way, it is met by several major tributaries. The mainstream of KRB has a length of approximately 1,400 m, and it flows for a distance of 305 km in Maharashtra, 483 km in Karnataka and 612 km in Telangana and Andhra Pradesh before finally out debouching into the Bay of Bengal (Jain et al., 2007). Even though several tributaries (viz., Koyna, Yerla, Varna, Panchganga, Dhodhganga, Ghataprabha, Malaprabha, Don, Bhima, Tungabhadra, Dindi, Halia, Musi, Paleru, Munneru and Wyra) feed the Krishna River, the Bhima River from the northwest and the Tungabhadra River from the west to southwest are the two major tributaries in KRB. Thirteen major tributaries join the Krishna River along its course, out of which six are right bank tributaries and seven are left bank tributaries (Table 1). Among these major tributaries, the Ghataprabha, the Malaprabha and the Tungabhadra are the principal tributaries joining the right bank, which together account for 35.45% of the basin area, whereas the Bhima, the Musi, and the Munneru are the principal left bank tributaries, comprising of 35.62% of the basin area.

The river Krishna has cultural and religious importance in the state of Maharashtra. The river provides for the agricultural economy in the state as it allows for water for irrigation for sugarcane production. Also, the weir at Vijayawada district distributes the water for irrigation and acts as the control system. The river has several dams and hydroelectric power project plants on it which harness the potential energy of the river. The presence of wildlife sanctuaries also helps in preserving flora and fauna in the Krishna basin system. A few famous sanctuaries and reserves include Nagarjuna Sagar-Srisailem tiger reserve and Krishna Wildlife sanctuary which is home to a number of migratory birds. The river basin also has rich mineral deposits of coal, oil, limestone, gold, uranium, diamond etc. in the deposits of Krishna Godavari Basin, Nalgonda, Kudremukh,

Donimalai and Yellur. The seasonal rains feed the river during monsoon which increases the level and flow of the mighty Krishna river. The river witnesses an outstanding cultural and religious significance with diversity in language, lifestyle and food. Places of Interest on the Banks of Krishna River: Wai is the first Indian city on the banks of Krishna River in Satara district. Sangli is the largest city on the banks of Krishna River in Maharashtra, while Vijayawada is the largest city on the banks of Krishna River in Andhra Pradesh. Places like Audumber and Narsobawadi are situated on the banks of Krishna River near Sangli are famous pilgrimage spots. Srisailem, one of the twelve jyotirlingas which has a shrine in one of the shakti peethas in India on the Krishna River. There are three tributaries which meet Krishna River near Sangli. Warana River meets Krishna River near Sangli at Haripur. This spot is also known as Sangameshwar. These places are considered among the most sacred in Hindu mythology.

Important places on banks of River Krishna: Mahabaleshwar: Mahabaleshwar besides being a popular hill station and a weekend getaway from Mumbai is also the source of the Krishna River. Mahabaleshwar is located at an altitude of 1,372 meters in the Western Ghats. Mahabaleshwar can also be called the 'land of five rivers', since the holy streams Krishna, Koyna, Venna, Gayatri and Savitri emerge from here. There are many places of tourist interest in Mahabaleshwar. Lodwick Point is an important landmark in Mahabaleshwar. It is considered one of the finest locations in Mahabaleshwar from where one can enjoy the beauty of the surrounding area. This point was earlier known as Sydney Point. Arther Point is the queen of all points. It is fascinating to see the barren deep valley Savitri on the left and shallow green valley on the right. Other places of tourist interest in Mahabaleshwar include Elphinstone Point, Tiger's Spring, Kate's Point, Bombay Point, Wilson Point, Venna Lake and Kate's Point. Lingmala, Chinaman and Dhobi Waterfalls are also worth visiting in Mahabaleshwar. Kate's Point (also known as sunrise point) in particular offers fabulous view of the Krishna River. Srisailem: Leaving Mahabaleshwar behind, the Krishna river takes the form of Dhom in Panchgani, a beautiful hill station close (17 km) to Mahabaleshwar. It meanders through Narsobachi, Wadi in Maharashtra and

crisscrosses its way through Karnataka before entering Andhra Pradesh. Srisailem (in Andhra Pradesh) is a holy town located on the banks of Krishna. Srisailem is surrounded by lush greenery and has beautiful locations around.

It is a wonderful weekend getaway from Hyderabad. Srisailem Sanctuary is the main attraction that covers an area of 3568 sq kms. The down-water Srisailem dam is home to a variety of crocodiles. Nagarjuna Sagar: Popularly known for the Nagarjuna Sagar Dam, Nagarjuna Sagar is approximately 170 km from Hyderabad. The dam is an engineering marvel. Stretching across the mighty river Krishna, the barrage also has another distinction to its credit – it has created one of the world’s largest man-made lakes. The dam has played an important role in the agricultural sector of the state. Nagarjunakonda was the largest and most important Buddhist centres in South India . The place derives its name from Acharya Nagarjuna, a renowned Buddhist scholar and philosopher, who had migrated here from Amaravati to propagate and spread the Buddha’s message of universal peace and brotherhood. Not too far from Nagarjunakonda is Anupa, where a Buddhist University and Stadium were excavated. Amaravati: Situated on the banks of the Krishna, Amaravati is a small town in Guntur district of Andhra Pradesh. Amaravati is an excavation site and was once the capital of Satavahanas. It is one of the important Buddhist sites in India. Amaravati is located about 60 km from Vijayawada. Amareswara Temple is the major tourist attraction in Amaravati. The temple is dedicated to Lord Shiva. It is believed that Lord Shiva is present here in the form of five lingams -Pranaveswara, Agasteswara, Kosaleswara, Someswara and Parthiveswara. The temple is built in the Dravidian style of architecture and has many legends associated with it. The remains of a 2000-year-old Buddhist settlement along with the great Buddhist stupa are among the main attractions in Amaravati. Mahachaitya or the Great Stupa was constructed approximately 2000 years ago. The stupa is made of brick with a circular vedika and depicts Lord Buddha in a human form, subduing an elephant. Vijayawada: Vijayawada being a popular trade and commerce centre is also referred to as ‘the business capital of Andhra Pradesh’. Vijayawada is the 3rd largest city in Andhra Pradesh and is the largest city on the banks of Krishna River. River: Krishna River is about 1300 km in length. The Krishna River Basin

extends over an area of about 258,948 sq. km, which is nearly 8 percent of the total geographical area of the country. Regur soils, red soils, laterite and lateritic soils, alluvial soils, mixed soils and saline and alkaline soils are found in the Krishna River Basin. The River Krishna Delta is one of the most fertile regions in India. Krishna River flows past the Kodashi Dam Barrage in Maharashtra. Ecologically, Krishna River causes heavy soil erosion during the monsoon. In the months of June and July, Krishna River takes the fertile soil from Maharashtra, Karnataka and western Andhra Pradesh towards the delta region.

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