3. Study area

India is situated in Northen hemisphere of 8° 4’ and 37° 6’ North latitude and 68° 7’ and 97° 25’ East longitude. It is the seventh-largest country in the world, with a total area of 32,67,500 sq.km., of which 90.08% is land and 9.92% is covered with water. India is one of the major oil seeds grower. India’s vegetable oil economy is world’s fourth largest after USA, China & Brazil. The diverse agro-ecological conditions in the country are favourable for growing 9 annual oil seed crops, which include 7 edible oil seeds (groundnut, rapeseed & mustard, soybean, sunflower, sesame, safflower and niger) and two non-edible oil seeds (castor and linseed). Gujarat is India’s seventh state in area and tenth largest in population. Gujarat located between 20° 01’ and 24° 07’ North latitude and 68° 04’ and 74° 04’ East longitude is a Western most state of the country, which is holding an area of 75,686 sq mt. (1,96,077 km²) with a coast line of 1600 km, dotted with 41 ports. Gujarat was created 26 administrative districts in the state. Gujarat has about 19.66 lakh hectares of land under forest. Gujarat has an agricultural economy. The diverse agro-ecological conditions in the state are favourable for growing oilseeds. A wide range of oil seed crops is grown in different agro-climatic regions of the state. Among the oil seeds, groundnut is the most important crop produced in the state. The state is the largest producer of groundnut and second largest producer of sesamum in the country. The state is also the largest producer of castor in India. The productivity of castor in the state is the highest not only in India but also in world. The major crops grown in different parts of Gujarat are bajra, wheat, jowar, maize, cotton, groundnut, castor, rapeseed-mustard, fodder and horticultural crops.

3.1. Background of Banaskantha District

Banaskantha is one among the twenty-six districts of the Gujarat state of India. The administrative headquarters of the district is at Palanpur which is also its largest city. The district is located in the Northeast of Gujarat and is presumably named after the West Banas River which runs through the valley between Mount Abu and Aravalli Range,
entering into the plains of Gujarat in this region and flowing towards the Rann of Kutch. The district is famous for the Ambaji temple and the Balaram temple which draw many tourists. Banaskantha District lies on north-west side of Gujarat State. The District is surrounded by Marwad and Sirohi regions of Rajasthan State in the north, Sabarkantha District in the east, Mehshana District in the south and Patan District in the west. Border of Pakistan touches the desert. The main rivers in the district are Banas, Saraswati River and Sipu. Strategically, Banaskantha District is of much importance because of its sensitive borders. Being a border State of Gujarat, Banaskantha's problems demand urgency from military viewpoint.

Banaskantha District includes the area around the Bank of Banas river. The District is situated between $23^033'$ to $24^045'$ north latitude and $72^015'$ to $73^087'$ east longitude. The Geographical area of the Banaskantha district is 12,70,300 Hect. The district has 12 talukas with 1250 villages namely (1) Palanpur (2) Deesa (3) Dantiwada (4) Danta (5) Vadgam (6) Amirgadh (7) Dhanera (8) Tharad (9) Vav (10) Bhabhar (11) Diodar (12) Kankrej. Among the twelve talukas we have selected 6 taluka viz., Palanpur, Deesa, Dantiwada, Vadgam, Amirgadh and Danta.
Plate 3.1: Physical location of the study area

Banaskantha district showing study area
3.1.1 Climate

The climate is subtropical with extremely hot summer and relatively moderate winter the three main season are monsoon (rainy season) during mid June and Last upto Mid- October. Gradually it becomes exceedingly dry and cold (winter season) during Mid-October to February. Followed by a long hot period (summer season) during March- mid June.

3.1.2 Temperature

A wild variation of temperature is observe round the year summers are generally very hot the temperature increases rapidly after mid March. May and June are the hottest months when temperature reaches up to 44°C. Temperature starts declining in the month of October after the withdrawal of monsoon.

3.1.3 Rain fall

Rainfall in the area is very erratic and unevenly distributed. Rains generally start in the last week of June and intermittently continue up to September end. Highest intensity of Rain is generally observed in the month of July. The average annual rainfall is about 400 to 650 mm.

3.1.4 Soil

The soil in Banaskantha District in general is neutral. Electricity conductivity, too, is low. Organic carbon and nitrogen is low, phosphorus and Potash content of the soil is medium.

3.1.5 Water

Since the area is mostly mountainous, acute shortage of water except in the rainy season is observed every year. Many check dams, guzzler tanks, small ponds and hawadas have been constructed.

3.1.6 Wind

General direction of the wind is from south-west during November, December and January, cold winds blow constantly from the north east direction. During April and may, hot winds starts blowing from early forenoon.
Wind velocity is, at time quite high, so creation damage by way of shaping and uprooting the trees is not uncommon. During summer, dust storms are sometimes observed.

**3.1.7 Humidity**

Humidity in the air is generally low and rarely exceeds 20-25 percent except in the rainy season when it ranges between 60-80 percent.

**3.1.8 Economy**

The economy of the district is based on agro & food processing and mineral based industries (ceramics). The food processing industry in the district has attracted 57% of the total investment in the district over the last two decades. The district ranks first in the state in the production of vegetables contributing nearly 17.67% to the total vegetable production of Gujarat. It is the largest producer of potatoes in the state. Bajri, Maize, Tobacco, Castor oil, Jowar are the other major crops of the district.