

**GOVERNMENT OF INDIA
GEOLOGICAL SURVEY OF INDIA**



**LANDSLIDE HAZARD ZONATION OF
KUMTA - KARWAR (UPTO MUNDRALI VILLAGE) ROAD CORRIDOR, UTTAR
KANNADA DISTRICT, KARNATAKA**

**(Progress Report for Field Season 2013-14)
Code No.: LHZ/ SR/ KG/2012/071**

BY

K.V.MARUTHI

SUPERINTENDING GEOLOGIST

**Project: ENGINEERING GEOLOGY
State Unit: Karnataka and Goa
BANGALORE
2014**

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**कर्नाटक राज्य के उत्तर कन्नडा जिले में (मुन्ड्राली गाँव तक) कुमटा-कारवर मार्ग कॉरिडोर
का भूस्खलन आपदा अनुक्षेत्र वर्गीकरण
(कार्य सत्र 2013-14 का प्रगति प्रतिवेदन)
क्रमांक एल एच जेड/एस आर/के जी/2013/071**

द्वारा

**के.वी.मारुति
अधीक्षक भूविज्ञानी**

सारांश

राष्ट्रीय मार्ग-17 में कुमटा-कारवर मार्ग कॉरिडोर पर, मुन्ड्राली गाँव तक, 1: 25, 000 मान के माफ़ो पैमाने पर भूस्खलन आपदा अनुक्षेत्र वर्गीकरण का कार्य किया गया। यह कार्य भारतीय भूवैज्ञानिक सर्वेक्षण, दक्षिणी क्षेत्र के मद क्रमांक एल एच/एस आर/के जी/ 2013/071 के अनुसरण में, 60 किलोमीटर क्षेत्र के दोनों ओर, 1 किलोमीटर तक कुल 120 वर्ग किलोमीटर क्षेत्र पर कार्य किया गया।

भारतीय भूवैज्ञानिक सर्वेक्षण के संशोधित बी आई एस मार्गनिर्देशों के अनुसार यह अन्वेषण किया गया, जिसमें प्रति थीम वार ढाल फलक के मानचित्रों को तैयार करना, ढाल आकारमिति, अश्मविज्ञान, संरचना, भूमि उपयोग, भूमि आवरण, सापेक्ष उभार, ढाल अपरदन अवस्था, भूस्खलन आपतन, आनुपातिक वर्षा व अंत में आपदा अनुक्षेत्र वर्गीकरण मानचित्र को तैयार करने का कार्य शामिल हैं। कुल अनुमानित आपदा (टी ई एच डी) मूल्य को आकलित करने व अंत में संस्तरों के वर्गीकरण के लिए भूस्खलन के लिए उत्तरदाई घटकों व मार्गनिर्देशों के अनुसार अनुमांतकों का पालन किया गया।

अन्वेषण के दौरान यह देखा गया है कि, अधिकांश भूस्खलन मलबा भूस्खलन (Debris and landslides) हैं और रोड निर्माण के लिए प्राकृतिक ढाल को काटने के कारण उत्पन्न हुए हैं। मानसून के दौरान घाट सेक्शन में हुई भारी वर्षा से, खड़ी ढलान नष्ट-भ्रष्ट हो चुकी हैं। अध्ययन क्षेत्र के अधिकांश भागों में $<15^\circ$ तक बहुत ही मंद ढाल है। क्षेत्र में नाइस, शिस्ट, ग्रेनाइट व लैटराइट हैं। उपरिभार पदार्थ अपक्षयित चट्टान व मृदा हैं। कुल 40 भूस्खलन आपतन रिकॉर्ड किए गए हैं, जिनमें पूर्व तालिका अध्ययन के दौरान रिकॉर्ड किए गए भूस्खलन व 7 नए भूस्खलन भी हैं। भूस्खलन आपदा अनुक्षेत्र वर्गीकरण मानचित्र का निर्माण, फलक को मूल इकाई के रूप में मानकर व हर एक फलक को भूस्खलन आपदा मूल्यांकन घटक (एल एच ई एफ) मूल्य देकर, किया गया। फलक का टी ई एच डी, प्रत्येक फलक के सभी दस भू-वातावरणीय मानदण्डों के भूस्खलन आपदा मूल्यांकन घटक (एल एच ई एफ) मूल्य को जोड़ने के बाद आकलित किया जाता है।

इस प्रकार तैयार किए गए भूस्खलन आपदा मानचित्र से यह स्पष्ट होता है कि, क्षेत्र का मुख्य भाग अति निम्न आपदा जोन (वी एल एच जेड)-58.24%, उसके बाद निम्न आपदा जोन (एल एच जेड)-37.36%, साधारण आपदा जोन (एम एच जेड)-2.67% व उच्च आपदा जोन (एच एच जेड)-1.73% की श्रेणी में आता है। अति उच्च आपदा जोन (वी एच एच जेड) नहीं पाया गया। उच्च आपदा जोन राष्ट्रीय मार्ग -17 के दोनों ओर आने वाले फलकों तक सीमित है। इस क्षेत्र में अधिकांश स्खलन, विकासात्मक क्रियाओं के लिए बनाए गए ढाल के कारण हुए हैं। सभी स्लाइडों में ढाल कोण व ऊँचाई महत्वपूर्ण भूमिका निभाती हैं। भूस्खलन रोकने हेतु कगारों (बेंच) का निर्माण, अनुपातन, ढालों के ज्यामितीय संशोधन, ढाल संरक्षण के जैव-तकनीकी संरक्षण उपाय व उचित अपवाह तंत्र के प्रबंध की अनुशंसा दी जाती है।

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SUPERINTENDING GEOLOGIST
ABSTRACT**

The Landslide Hazard Zonation on Macro scale (1:25,000 scale) was taken up for Kumta-Karwar up to Mundralli village of NH-17 road corridor. A total of 120 sq.km are covering one kilometre on both the sides of 60 1km has been covered pursuant to the annual programme of Geological survey of India southern region, item no: LHZ/ SR/ KG/2013/071

The investigation was carried out using modified BIS guidelines of GSI which includes preparation of maps of the individual theme wise slope facet, slope morphometry, lithology, structure, land use, land cover, relative relief, slope erosion condition, landslide incidences, average rainfall and finally preparation of Landslide Hazard Zonation map. Factors responsible for landslides and their ratings as envisaged in the guidelines were adhered to calculate the total estimated hazard value (TEHD) and finally classifying the zones.

During the investigation it is observed that majority of the slides occurred in the area are debris slides caused due to cutting of the natural slope for making road. The vertical cut slopes have failed due to heavy rain in the Ghat section during monsoon. The maximum portion of the study area has a very gentle slope with general slope angle <15°. The lithology of the area is gneiss, schist, granite and laterite. Overburden material is weathered rock and soil. A total of 40 Landslide incidences recorded which includes landslides recorded in earlier Inventory studies and 7 new landslides. The landslide hazard zonation map has been prepared taking facet as fundamental unit and assigning Landslide Hazard evaluation Factor (LHEF) value of each facet. The TEHD of the facet is calculated after adding LHEF values of all ten geo-environmental parameters of the particular facet.

The landslide Hazard map thus prepared reveals that Major part of the area falls under the category of very Low Hazard zone (VLHZ)-58.24% followed by low hazard Zone (LHZ)-37.36%, Moderate Hazard zone(MHZ)-2.67% and High hazard zone (HHZ)-1.73%. Very high hazard zone (VHHZ) is absent. The high hazard zone is restricted to the facets falling either side of NH-17. As majority of the slides in this area are due to slope cut for developmental activities. Cut slope angle and height plays a major role in all the slides. The recommendation suggested includes geometrical modification of the slope by grading by bench, bio-technical slope protection measures and provision of proper drainage arrangements.

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1. INTRODUCTION

Landslides in Western Ghat is a recurring problem for years, causing disruption in communication routes, damaging properties and killing people. The road development, the shifting of agricultural practice from orthodox seasonal crops to cash crops has put tremendous pressure on the natural slopes of the Western Ghats. With passing time the modification of slopes due to human interference in the natural slope has deteriorated the equilibrium attained by nature. While not every landslide results in catastrophe, the damage from many small ones may equal or exceed the impact of a single major failure. Thus, both large and small landslides are capable of causing significant damage and loss of life. With every passing monsoon over the Western Ghat a number of landslides are triggered. The blockade, damage and disruption of traffic along important a road linking the prime cities creates lot of hardship for the public.

1.1. LOCATION

Karnataka is bound by the Arabian Sea in the west, Goa and Maharashtra in the northwest and north, respectively and Tamilnadu and Kerala to the South. The Western Ghat belt known for its thickly vegetated forests and mineralization is an irregularly elongated NW-SE trending belt. In Karnataka, the Western Ghats extend from Coorg district in the south to Uttar Kannada district in the north. The area of investigation is demarcated approximately 1km on both sides of the communication routes Kumta-Karwar-up to Mundrali village falling in parts of toposheet no 48 J/7/NE, 48J/6/SE, 48J/6/SW, 48/J/NW, 48/J/2/NE, 48/J/1/SE and 48/J/1/SW (Plate 1).

1.2. PREVIOUS WORK

In India, preliminary studies in the field of landslide zonation were initiated by Oldham (1880), Middlemiss (1890) and Holland (1897). Seshagiri et.al. (1982) considering five parameters carried out landslide hazard zonation by categorizing each parameters and assigning Landslide Susceptibility Index (LSI) on the basis of percentage of Landslides in each category. Anbalagan (1992) used Lithology, structure, slope, relief, land use, land cover and ground water condition to prepare zonation. An Indian standard (BIS: IS; 14496 (part 2), 1998) was introduced as guidelines for preparation of

macro scale Landslide Hazard Zonation (LHZ) map on scale 1:25,000 or 1:50,000. In Karnataka Mishra et al. (2010) carried out Zonation in a Geographical Information system (GIS) environment of Madikeri Township. Mishra et al. (2010)¹ also carried out a zonation in GIS environment of road corridor of Charmudi ghat section from Charmudi to Kotigehara, Kotigehara to Kalasa and Shiradi Ghat section from Sakleshpur to Uppinangadi. Maruthi and Chandran (2013) has carried out Zonation on Macro scale using modified BIS guidelines between Virajpet-Madikeri-Sulya road corridor.

1.3. PRESENT WORK

The National Highway (NH-17) connecting Mangalore with Panaji passes through Kumta and Karwar is an important road corridor (Photo 1). Konkan rail route also passes through the study area. The section both road and rail are known to have several landslide incidences that have caused severe damages and several road-blockades in the past. The Karwar- Mundarali village sector and environs have also witnessed large landslides including Kadwad landslide in which 19 people were lost their lives (Maruthi & Chandran 2012¹ and 2012²). Detailed site specific studies of Kadwad (Photo 4) and Sasanwad landslides and inventory studies along Kumta-Karwar road section have already been completed. Heavy rainfall during monsoons in Karwar region is known to trigger many slides in the area. The modified Landuse in the hills appears to have disturbed the natural equilibrium of the slopes in the area. The study also would assess the impact on environment by the anthropogenic activities, suggesting hazard free areas for developmental activities

1.4. OBJECTIVES

The landslide hazard Zonation (LHZ) of the area aims at identifying the landslide potential zones and ranking them in order of the degree of hazard from landslides. The Landslide Hazard Zonation in Macro scale (1:25,000 scale) 1km on both side of the communication routes Kumta-Karwar-Up to Mundrali village (NH-17) were taken up during FS 2013-14 under the annual programme (Code: LHZ/SR/KG/2013/071) of Mission IV related to Engineering geology and Geotechnical investigation programme of Landslide Hazard Evaluation. A total area of 60 Lkm and 120 sq km was covered.

The objectives of the present study are as follows.

- 1) Preparation of thematic maps covering themes such as geology, land use, land cover, slope, aspects etc.
- 2) Preparation of Landslide Hazard Zonation/evaluation map.

1.5. NATURE AND QUANTUM OF WORK

Sl. No	Nature of work	Total workload envisaged	Work proposed for FS 2013-2014	Work completed
I	Preparation of thematic maps(on 1:25,000 scale)	60 L Km/ 120sq.km.	60 L Km/ 120sq.km.	60 L Km/ 120sq.km.
	a)Slope Facet Map	-do-	-do-	-do-
	b) Slope Morphometry	-do-	-do-	-do-
	c) Lithology	-do-	-do-	-do-
	d) Structure	-do-	-do-	-do-
	e) Land use /land cover Map	-do-	-do-	-do-
	f) Relative Relief Map	-do-	-do-	-do-
	g) Hydro geological Map	-do-	-do-	-do-
	h)Landslide Incidences Map	-do-	-do-	-do-
	i) Annual rainfall data	-do-	-do-	-do-
II	Preparation of Landslide hazard zonation/ Susceptibility map on macro scale (1: 25,000 scale) using BIS/ modified BIS code (GSI)	60 L Km/ 120sq.km.	60 L Km/ 120sq.km.	60 L Km/ 120sq.km.

1.6. PHYSIOGRAPHY AND DRAINAGE

The study area from Kumta-Karwar has an undulating topography with higher peaks found between Kumta-Ankola & Aversa-Karwar. It has an average elevation of 200-300 m. Karmane Gudda (430 m asl) north west of Aversa is the highest peak of the study area, peak of 380 m.asl south east of Karwar, peak of 322 m.asl east of Amadalii and peak of 308 m.asl South east of Belase are some of other major ones.

The major rivers in the study area are Kali River flowing in east to west direction towards the Arabian Sea in the northern part outside the study area but the back waters of Kali are seen in and around Kadwad area (Photo 9). In the central part of the study area Gangavalli River flows from east to west. In the southern part of the study area Aghnashini or Tadri rivers flows from west to east. Small nalas like Golari Halla, Navagadde halla ,Hattikeri Halla, Kudari halla all flow from west to east and join Arabian sea (Photo 5). The drainage pattern of the area is mainly dendritic, sub-dendritic.

1.7 CLIMATE AND RAINFALL

The area receives moderate to high rainfall during monsoon season with an average annual rainfall of nearly 2500mm. The area experiences a slightly hot summer with temperature ranging from 32°C to 33°C during April and May months and mild winter with maximum temperature of 20°C and minimum of 16°C.

1.8 ACKNOWLEDGEMENTS

The author is sincerely thankful to the then Dy. Director General, SU: Karnataka and Goa Shri. M.Ravikumar and present Dy. Director General Shri.T.Krishnappa for providing all the logistic support, guidance and encouragement. He is thankful to M.K.Rao, Director for Supervising the work and finally Dr.H.S.M.Prakash, Director (CT) for careful scrutiny of the report.

2. REGIONAL GEOLOGY

The area exposes the rocks of Sargur Group, PGC and older granitoids, Bababudan and Chitradurga Group of Dharwar Supergroup, mafic-ultramafic complex of Archaean age and basic intrusives like dolerite dykes of Paleo-Proterozoic age are intruded in all these group of rocks. Laterite caps of Cenozoic age are also recorded in the area.

Older metamorphics of Sargur Group of rocks exposed 1 km northeast of Mudaga village and are represented by amphibolite occurring as enclaves within granite as irregular sporadic lenses. The amphibolites are dark in colour, fine to medium grained, massive and schistose, rich in hornblende and plagioclase.

The Peninsular Gneissic Complex represented by granitic gneiss and granodiorite gneiss. Peninsular Gneisses represented by granite gneiss is widely exposed in the western part. They are well exposed around Belekeri to Gokarna, around Aghanashini river in the south. It is white to light grey, with gneissic texture, consists of quartz, orthoclase, plagioclase and with lot of epidote and few laths of muscovites show gneissic texture and at places with migmatitic structures..

The Dharwar Supergroup of rocks and PGC-I are intruded by older granitoid locally referred as Karwar granite. They are seen widely exposed in the entire northern part. The granite is massive and non-foliated. It is generally coarse grained, porphyritic, grey with pink variants, consists of quartz, potash feldspars, plagioclase, biotite mica, muscovite, epidote, potash feldspar and accessory minerals like sphene and apatite.

Bababudan group of rocks locally referred as North Kanara belt represented by Kudremukh Formation comprises of Quartzite and hornblende-actinolite-chlorite schist. It is exposed as narrow band from around east of Hiregutti, and around Marur, east of Kumta, It consists of elongated prisms of hornblende, actinolite, tremolite and grains of epidote in minor amount in a dense ground mass of quartz and feldspars. Orthoquartzites of Kudremukh Formation is exposed as a narrow linear band in the northeastern part at north of Hattikeri. It is white to cream in colour, hard, compact, banded at places and generally massive and consists of recrystallised quartz.

Layered mafic-ultramafic complex are the intrusive bodies represented by talc-tremolite schist, gabbro with pyroxenite bands and titaniferous-vanadiferous magnetite bands. The ultramafic rocks have been undergone to serpentinisation.

All the group of rocks in the area have been traversed by the basic intrusives like dolerite dykes of Paleo-proterozoic age with general trend NE-SW, NW-SE and E-W directions.

All the rock types in the area have undergone lateritisation of varying degrees. The laterite patches are noticed on PGC, Karwar Granite and hornblende-actinolite-chlorite schist. Its thickness is varying from 5-8 m. It is buff white to pink brown in colour and is alluminous to ferruginous in composition. (Ananthnarayana (1990), Iyengar et.al(1967) , Kariyanna and Asit Saha(1994), Ramakrishna (1967), Shafeeq Ahamed et.al(1986), Shafeeq Ahamed(1990), Subramanian(1968) and Subramanian(1969).

3. METHODOLOGY

Landslide Hazard Zonation (LHZ) indicates the susceptibility of the defined sample slope units of an area to landslides in space and time. The spatial distribution of the landslides produces a susceptibility map which divides all the similar sample units into various classes.

3.1. THE BIS AND MODIFIED BIS CODE (BY GSI) FOR MACRO SCALE LANDSLIDE HAZARD ZONATION

In 1998, the BIS published guidelines for preparation of Landslide Hazard Zonation maps in mountainous terrains (Code No. IS 14496 (Part 2), 1998) which was later modified by GSI and circulated incorporating the few factors that were necessary to be included.

The BIS guidelines and modified BIS guidelines by GSI for macro level Landslide Hazard Zonation mapping on 1:25,000/50,000 scales are tabulated below.

A. BIS guidelines for Macrozonation (1:25,000 to 1:50,000 scale)

<i>Sl no</i>	<i>Causative factors</i>	<i>Maximum LHEF rating</i>
1	Lithology	2
2	Structure	2
3	Slope Morphometry	2
4	Relative relief	1
5	Land use and Land cover	2
6	Hydrological condition	1
	<i>Total</i>	<i>10</i>

B. Modified BIS guidelines by GSI for Macrozonation (1:25,000 to 1:50,000 scale)

<i>Sl no</i>	<i>Causative factors</i>	<i>Maximum LHEF rating</i>
1	Slope Morphometry	2
2	Lithology	2
3	Structure	2
4	Relative relief	1
5	Land cover	1
6	Land use	1
7	Rainfall	1
8	Hydrological condition	1
9	Landslide incidence	2
10	Slope erosion	1
	<i>Total</i>	<i>14</i>

As per the maximum LHEF (Landslide Hazard Evaluation Factor) rating the various types of Landslide hazard zones defined by the BIS guideline and modified BIS guidelines are as follows

A.BIS guidelines (1989)

Zone	TEHD Value	Description of zone
I	<3.5	Very Low Hazard Zone(VLHZ)
II	3.5-5.0	Low Hazard Zone(LHZ)
III	5.1-6.0	Moderate Hazard Zone(MHZ)
IV	6.1-7.5	High Hazard Zone(HHZ)
V	>7.5	Very High Hazard Zone(VHHZ)

B.GSI modified guidelines

Zone	TEHD Value	Description of zone
I	<4.9	Very Low Hazard Zone(VLHZ)
II	4.91-7.0	Low Hazard Zone(LHZ)
III	7.1-8.4	Moderate Hazard Zone(MHZ)
IV	8.41-10.5	High Hazard Zone(HHZ)
V	>10.5	Very High Hazard Zone(VHHZ)

3.2. DETAILS OF THE TEN GEOENVIRONMENTAL PARAMETERS AND DISTRIBUTION OF LANDSLIDE HAZARD EVALUATION FACTOR VALUES FOR THE SUBCATAGORIES OF EACH GEOENVIRONMENTAL PARAMETERS.

The map units for data collection may have regular geometric shapes having specified dimensions or they may have irregular shapes having varied dimensions. The BIS defines the smallest map unit for zonation as “facet”. A facet is a part of the hill slope which has more or less similar characters of slope showing consistent direction and inclination. The facets are generally delimited by ridges, spurs, gullies and rivers. Details of the ten geoenvironmental parameters and distribution of landslide hazard evaluation factor values for subcategories of each geoenvironmental parameters as proposed by modified BIS by GSI are as follows.

3.2.1. Slope Morphometry (LHEF rating 2)

Description	Category	Rating	Remarks (No. of contour lines of 20m interval over 100m length on 1:50,000)	Slope angle
i. Escarpment/cliff	>45°	2.0	>25	>45°
ii. Steep slope	36°-45°	1.7	19-25	36°-45°
iii. Moderately steep slope	26°-35°	1.2	13-18	26°-35°
iv. Gentle slope	16°-25°	0.8	8-12	16°-25°
v. Very Gentle slope	<15°	0.5	<7	<15°

3.2.2. Lithology (LHEF rating 2)

Description		Category	Rating	Remarks (Correcting factor for weathering)
1.Type of rock	Type I	i. Quartzite/Limestone/BHQ etc	0.2	i. Highly weathered rock, discolored, joints open with weathered products <i>Correction Factor C1</i>
		ii. Granite/Basalt/Charnockite etc	0.3	
		iii. Gneiss	0.4	
	Type II	i. Well cemented terrigenous sedimentary rocks dominantly sandstone with minor beds of claystone	1.0	ii. Moderately weathered rock discolored with fresh rock patches, weathering more along joint planes, but rock intact in nature. <i>Correction Factor C2</i>
		ii. Poorly cemented terrigenous sedimentary rocks dominantly sand rock with minor clay shale beds	1.3	
	Type III	i. Slate and Phyllite	1.2	iii. Slightly weathered rock slightly discolored along joint planes but intact in nature <i>Correction Factor C3</i> <i>For rock type I- C1=4, C2=3, C3=2</i> <i>For rock type II C1=1.5, C2=1.25, C3=1.0</i>
		ii. Schist	1.3	
		iii. Shale with inter bedded clayey and non clayey rocks	1.8	
		iv. Highly weathered shale, phyllite and schist	2.0	
2. Soil type		i. Older well compacted alluvial fill material(Old river terraces	0.6	
		ii. Clayey soil over bedrock	0.8	
		iii. Sandy soil over bedrock	1.2	
		iv. Older compacted colluvial material	1.4	
		v. Poorly compacted younger loose material or slide debris	2.0	

3.2.3. Structure (LHEF rating 2)

Description	Category	Rating	Remarks
Relationship of structural discontinuity with slope			Discontinuity refers to the planar discontinuity or line of intersection of two planar discontinuities which ever is important from point of view of stability α j- Dip direction of joint α i- Direction of intersection of two discontinuities α s-Direction of slope inclination β j-Dip of joint β i- Plunge of line of two discontinuities β s - Inclination of slope
i. Relationship of parallelism between slope and discontinuity(RS) Planar(α j- α s) Wedge(α i- α s) α	I. >30°	0.20	
	II. 15°-30°	0.30	
	III. 5°-15°	0.40	
	IV. <5°	0.50	
ii. Relationship of discontinuity and inclination of slope(RI) Planar(β j- β s) Wedge(β i- β s)	I. >15°	0.3	
	II. 0°-15°	0.5	
	III. -1°-(-15)°	0.8	
	IV. >(-15)°	1.0	
iii. Dip of discontinuity Planar(β j)(DP) Wedge(β i)	I. <15°	0.20	
	II. 16°-30°	0.25	
	III. 31°-45°	0.35	
	IV. >45°	0.50	
Depth of soil cover	<5m	0.65	Category I Very favourable
	6-10m	0.85	Category II favourable
	11-15m	1.20	Category III Fair
	16-20m	1.50	Category IV Unfavourable
	>20m	2.0	Category V Very unfavourable

3.2.4. Relative relief (LHEF rating 1)

Description	Category	Rating	Remarks
i. Low	<100m	0.3	In seismic zone II & III the maximum rating for relative relief be multiplied by 0.5. It is also considered 5. No correction is required for Zones IV & V
ii. Medium	101-300m	0.6	
iii. High	>300m	1.0	

3.2.5. Land cover (LHEF rating 1)

Description	Category	Rating	Remarks
i. Thickly vegetated forest area		0.4	
ii. Moderately vegetated area		0.6	
iii. Sparsely vegetated area with lesser ground cover		0.8	
iv. Barren land		1.0	

3.2.6. Land use (LHEF rating 1)

Description	Category	Rating
i. Agricultural land/populated flat land		0.2
ii. Moderately populated slope/village roads		0.5
iii. Thickly populated slope modified by large scale excavation		0.7
iv. Major communication routes involving extensive slope cutting		1.0

3.2.7. Hydrology (LHEF rating 1)

Description	Category	Rating	Remarks
i. Dry		0.2	
ii. Wet		0.5	
iii. Flowing/spring		1.0	

3.2.8. Average annual rainfall (LHEF rating 1)

Description	Category	Rating	Remarks
i. Low	<500mm	0.2	
ii. Medium	500-2000mm	0.4	
iii. High	>2000mm	0.6	
iv. History of cloud bursts		1.0	

3.2.9. Slope erosion condition (LHEF rating 1)

Description	Category	Rating	Remarks
i.	Deep gully erosion/rill erosion of hill slope	0.5	
ii.	Severe toe erosion by nala and river	1.0	

3.2.10. Landslide incidence (LHEF rating 2)

Description	Category	Rating	Remarks
i.	No landslide	0	
ii.	Dormant landslide	0.5	
iii.	One active landslide	1.0	
iv.	More than one slide or one very large active slide(material dislodged>100 cu.m)	2.0	

3.2.11. Total Estimated Hazard (TEHD) of each facet

Zone	TEHD Value	Description of zone
I	<4.9	Very Low Hazard Zone(VLHZ)
II	4.91-7.0	Low Hazard Zone(LHZ)
III	7.1-8.4	Moderate Hazard Zone(MHZ)
IV	8.41-10.5	High Hazard Zone(HHZ)
V	>10.5	Very High Hazard Zone(VHHZ)

4. ASSESSMENT OF GEOENVIRONMENTAL PARAMETRES AND LANDSLIDE HAZARD ZONATION OF THE STUDY AREA

4.1. SLOPE MORPHOMETRY (LHEF RATING 2)

Pre-field studies for the area included preparation of Slope facet Map (Plate 2) on 1:25,000 scale Survey of India toposheets, which were used as base maps. A total of 637 facets were identified and marked on the toposheet. The blank areas in Plate 2 where no facets are marked are the low lying plain areas with no elevation. The field check in the Kumta-Karwar (up to Mundrali village) road section was carried and the Facets were examined. Each slope facet represents a uniform slope and is bounded by ridge line, drainage or break in slope. The measured angle of slope inclination (in terms of tan of inclination) is marked and the direction of slope inclination is shown in each slope facet (Plate 3).

The slope ratings were given as per modified GSI guidelines (refer section 3.2.1). The area of higher slope having steep slope with slope angle ranging from 36° – 45° was given LHEF (Landslide Hazard evaluation Factor) rating of 1.2. The area under forest cover are either with moderately steep slopes 26° – 35° or gentle slopes 16° – 25° were given LHEF rating of 1.2 & 0.8 respectively (Annexure-III). The low lands from Ankola to Aversa, from Kumta to Hiregutti categorised as having very gentle slope $<15^{\circ}$ and are assigned LHEF rating of 0.5. Mostly the facets falls under very gentle slopes (393 facets) followed by Gentle slopes (191 facets) and moderately steep slopes (52 facets) with only 1 facet is having steep slope.

4.2. LITHOLOGY (LHEF RATING 2)

4.2.1. Type of rock: The parameter is mainly base on the available geological map and data added during the field investigation. Lithologically the area is represented by different lithounits namely Amphibolite, Granite gneiss, Karwar granite, Hornblend-actinolite-chlrte schist, pyroxenite talc-tremolite schist, quartzite, Vanidiferous titano magnetite, dolerite and laterite. The Lithology ratings were as per modified GSI guidelines (refer section 3.2.2). The Gneisses were given rating of 0.4; schist's were given rating of 1.3., granite were given 0.3 As there is no rating for laterite the rating was given as 1.0. These ratings are valid for normal rock conditions. For weathered conditions, correction factors C1, C2, and C3 are to be incorporated. The correction for weathering to be multiplied with the fresh rock rating. For rock Type-1, values for C1, C2 and C3 are 4, 3 and 2 respectively for highly weathered, moderately weathered and slightly weathered conditions. For rock type-2 these values are 1.5, 1.25, and 1.0 respectively for C1, C2 and C3. The final rock rating after weathering correction is given (refer Annexure-III).

4.2.2. Soil type: The soil cover predominates over the Lithology and due rating has been given accordingly wherever soil cover is present. The major soil type is Sandy soil over bed rock with rating of 1.2 and clayey soil over bedrock with rating of 0.8. The soil cover are generally dark brown to dark reddish brown and black in colour due to the accumulation of high organic matter under the forest cover.

114 facets have gneiss, 9 facets have schist, 250 facets have granite and 75 facets have laterite as Lithology. 189 facets do not have any litho exposure and are covered by soil. As it is difficult to

show separately the soil covered facets only Lithology in general are shown in map (Plate 4) but due rating has been given accordingly wherever soil cover is present (refer Annexure-III).

4.3. STRUCTURE (LHEF RATING 2)

The parameter is mainly based on the available geological map and data added during the field investigation. The structure ratings were as per modified GSI guidelines (refer section 3.2.3). The structural element studied in the field includes dip direction of joint, dip of joint, direction of slope inclination, inclination of slope, plunge of intersection line of two discontinuities, direction of intersection of two discontinuities. The regional strike of bedding swerves from NNE-SSW to NNW-SSE with $10-85^{\circ}$ westerly or easterly dips. The rocks are traversed by different set of joints. Very broadly, these can be classified in to four sets viz., J1-N60W/NE dipping with amount ranging from $30^{\circ}-90^{\circ}$, J2-N20W/NE dipping with amount ranging from $20^{\circ}-90^{\circ}$, J3- S10E/N to NE dipping with amount ranging from $30^{\circ}-90^{\circ}$ and J4-S35W/ N to NE dipping with amount ranging from $40^{\circ}-90^{\circ}$ (Photo 3). Maximum of the hill slopes are dipping either NE or SW because of the fact that all the major hills are trending NE-SW (Plate 4).

4.3.1. Relationship of Structural discontinuity with slope: Relationship between dip direction of slope and plunge direction shows that 285 facets give 0.2 rating value and 24 facets give 0.3 rating value. In case of Joint direction and slope direction 169 facets give 0.2 rating value.

4.3.2. Relationship of discontinuity and inclination of slope: In the case of Joint dip amount and inclination of slope, 200 facets give 0.3 rating and 200 facets give 0.0 rating. As far as plunge amount and slope inclination concerned 314 facets give 0.3 rating value.

4.3.3. Dip of Discontinuity: A total of 188 facets are having $>45^{\circ}$ dip amount with rating of 0.5 and only 12 facets are having $31^{\circ}-45^{\circ}$ dip amounts with rating of 0.35. As far as plunge of discontinuity 254 facets are having $>45^{\circ}$ dip amount with rating of 0.5 and 63 facets are having $31^{\circ}-45^{\circ}$ dip amounts with rating of 0.35.

4.3.4. Depth of soil cover: The depth of soil cover in the study area is $<5\text{m}$ so uniform rating of 0.65 has been given (refer section 3.2.3). The soil depth map is not prepared as the whole area falls in one zone but due rating has been assigned in computing TEHD (refer Annexure-III).

4.4. RELATIVE RELIEF (LHEF RATING 1)

The relative relief of each slope unit i.e. facet has been derived from the 1:25,000 scale Survey of India toposheets. The relative relief ratings were as per modified GSI guidelines (refer section 3.2.4). The relief of the area even though reaches up to 430m above msl, the relative relief of the slopes in the study area lies in all three categories. Category I (low relative relief with $<100\text{m}$ height) has 460 facets with rating of 0.3, category II (Medium relative relief with 101m-300m height) has 167 facets with rating of 0.6 and Category III (high relative relief with $>300\text{m}$ height) has 10 facets with rating of 1.0. The modified BIS code envisages that the influence due to seismicity is to be included into the relative relief factor. As area lies in seismic zone II the rating for the area has been modified to 0.15 (for facets with 0.3 rating) 0.3(for facets with 0.6 rating) and 0.5(for facets with 1.0 rating) and accordingly final relief rating has been assigned (refer Annexure-III; Plate 5).

4.5. LANDCOVER (LHEF RATING 2)

The land cover in the studied area includes the following dense scrub, open scrub, cashew plantation, eucalyptus plantation, dense jungle, dense mixed jungle and fairly dense mixed jungle (Photo 2). The land cover ratings were as per modified GSI guidelines (refer section 3.2.5). Vegetation cover over a slope mass plays an important role in protecting it from impact of atmospheric agencies and increasing the shear strength of slope mass by penetrating roots and reducing the infiltration in to slope mass. In the Kumta-Karwar sector most of the area is divisible in to all the three categories viz., moderately vegetated area with a rating of 0.6, sparsely vegetated area with lesser ground cover with rating of 0.8 and thickly vegetated forest area with a rating of 0.4. West of Mirjan, north of Hiregutti- around Hulkalla Gudda, near Baithkal, north of Aversa-around Karmane Gudda and east of Karwar around Guddehalli betta comes under thickly vegetated forest area with a rating of 0.4. There is no barren land found in the sector. 332 facets are grouped under thickly vegetated forest area with rating of 0.4 followed by 208 facets under moderately vegetated area with rating of 0.6 and 97 facets with sparsely vegetated area with lesser ground cover with rating of 0.8 (refer Annexure-III and Plate 6).

4.6. LANDUSE (LHEF RATING 2)

The land use pattern of an area depends on two factors viz. the natural set up and the human interference. The natural factors include topography, rainfall and climate, and the human interference is mainly due to the density, occupation of people, extent of technological development and socio-economic factors. Natural factors and human activity influences land use pattern. The land use ratings were as per modified GSI guidelines (refer section 3.2.6). The different land use type in this area are the agricultural land/populated flat land, major communication route involving extensive slope cutting , moderately populated slope/village road and thickly populated slope modified by large scale excavation.

In the Kumta-Karwar sector most of the lowland area is used for paddy cultivation (Photo 6), prawn farms (Photo 8) and is grouped under Agricultural land/ sparsely populated land with a rating of 0.2. The slopes which are extensively used for cashew plantations, Eucalyptus plantations & Acacia plantations are grouped under moderately populated slope/ village roads with a rating of 0.5. The area around major settlements like Karwar, Kumta, Ankola was grouped under thickly populated slope by large scale excavation with rating of 0.7. The area around the major road section NH-17 near Baithkal and Mirjan was grouped under Major communication road involving extensive slope cutting with rating of 1.0. (refer Annexure-III). 160 facets are grouped under moderately populated slopes/village roads with rating of 0.5 followed by 146 facets under agricultural land with rating of 0.2, 78 facets under Major communication route involving extensive slope cutting, 17 facets under thickly populated slopes modified by large scale excavation and 236 facets with no particular Landuse (Plate 7).

4.7. HYDROGEOLOGY (LHEF RATING 1)

The ratings for hydrological conditions were as per modified GSI guidelines (refer section 3.2.7). The hydro geological map is prepared and was validated in the field between Mundarali-Karwar-Ankola-Kumta road. Most of the study area is having wet or flowing conditions with rating of 0.5 & 1.0 respectively (refer Annexure-III). 476 facets are having wet conditions with rating of 0.5 and 161 facets are having flowing/spring conditions with rating of 1.0. Dry condition is not observed in any facet as the ratings were given after the monsoon season so many of the facets which would have been dry in summer is wet after rainy season (Plate 8).

4.8. AVERAGE ANNUAL RAINFALL (LHEF RATING 1)

Rainfall data for five stations were collected in the study area viz., Karwar, Hattikeri, Ankola, Balale and Kumta (Annexure-I). The data pertains to last 12 years from 2001 to 2012. The rain fall data was synthesised. It is found that all the stations receive average annual rainfall in the range of 3400 mm to 3600 mm. The study area between Karwar & Kumta falls in the range of average rainfall > 2000 mm and rating for LHZ studies will be 0.6. (Refer Annexure-III). The distribution of rainfall over the study area and different rain gauge stations from 2001-2012 and annual rainfall of the five stations are shown in Fig 1-11 & Table 1.

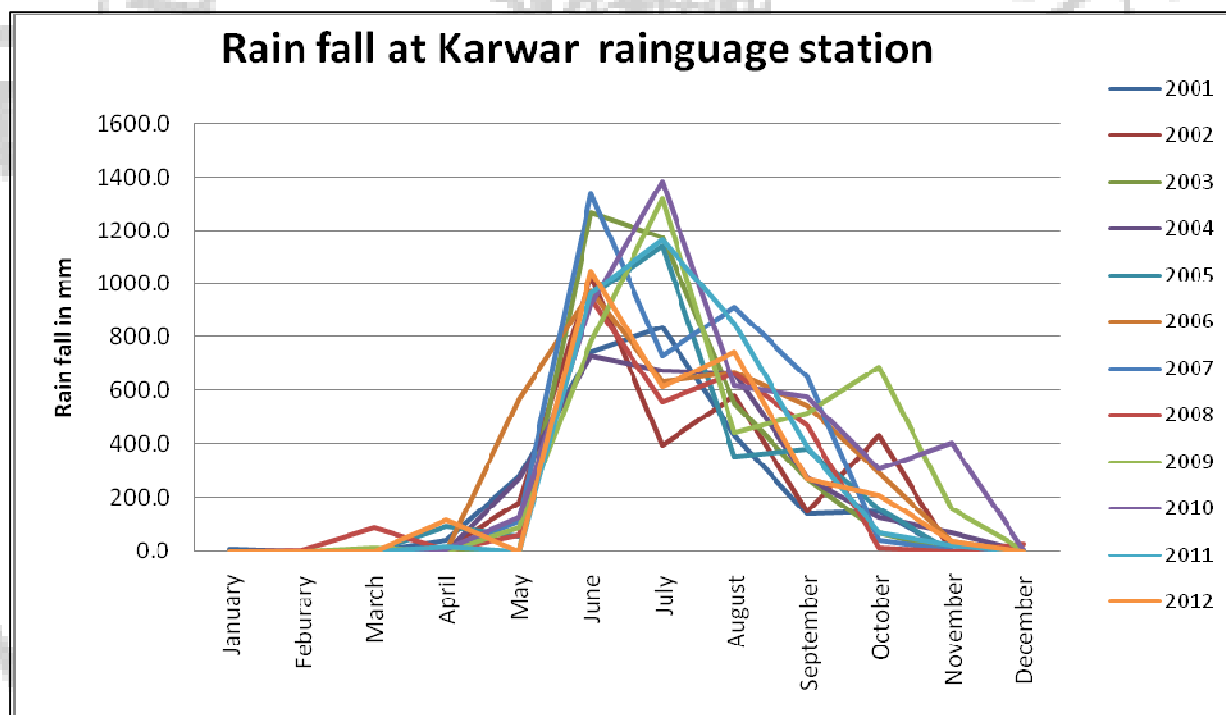


Fig 1: Distribution of rainfall pattern of Karwar rain gauge station from 2001 to 2012

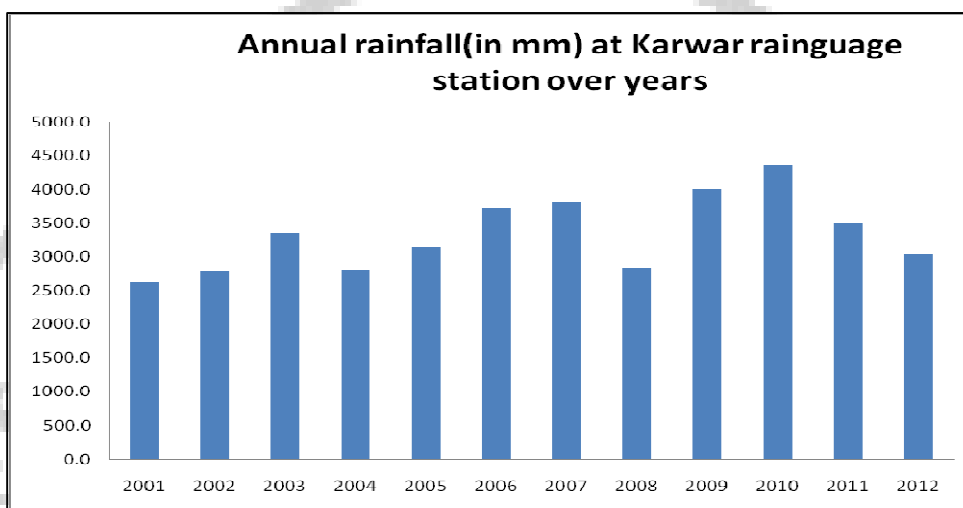


Fig 2: Annual rain fall (in mm) at Karwar rain gauge station from 2001 to 2012

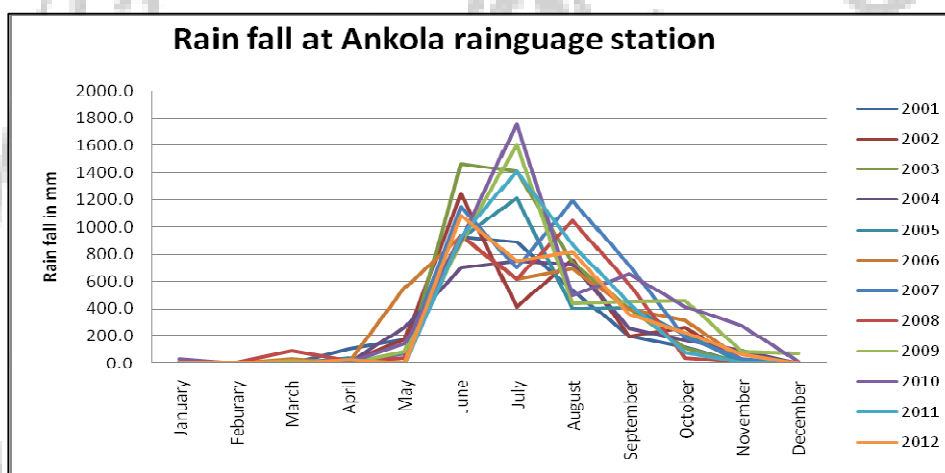


Fig 3: Distribution of rainfall pattern of Ankola rain gauge station from 2001 to 2012

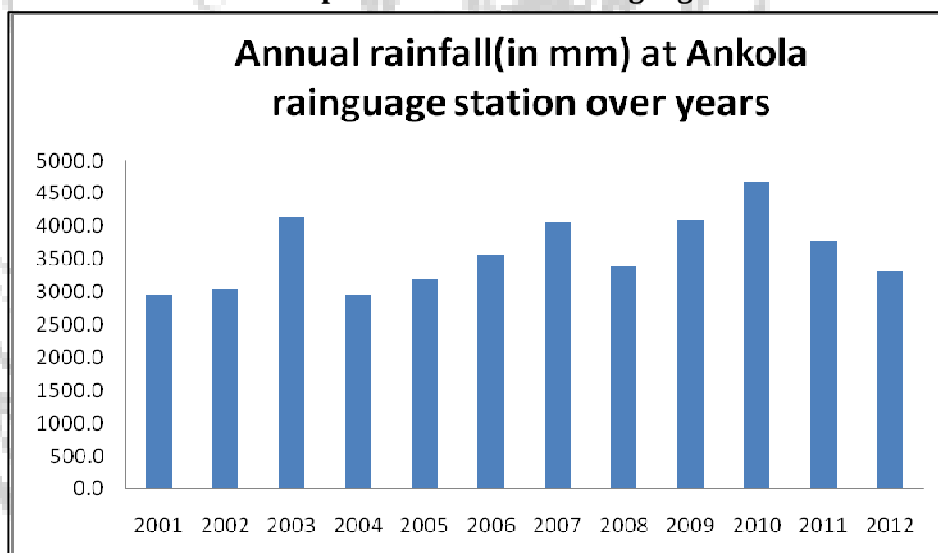


Fig 4: Annual rain fall (in mm) at Ankola rain gauge station from 2001 to 2012

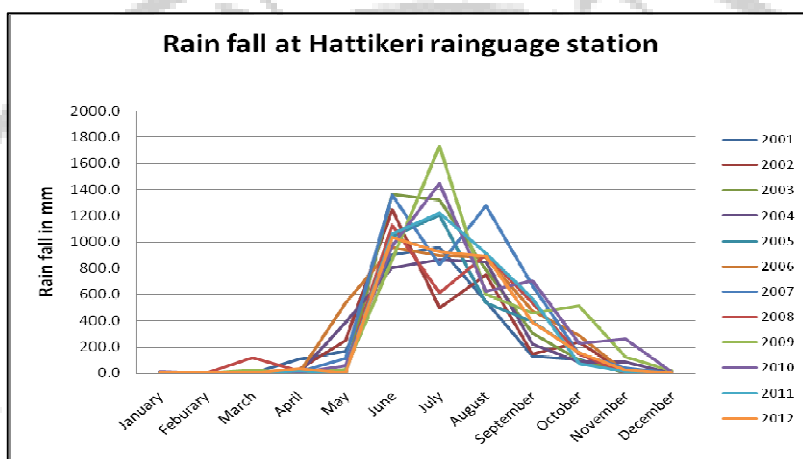


Fig 5: Distribution of rainfall pattern of Hattikeri rain gauge station from 2001 to 2012

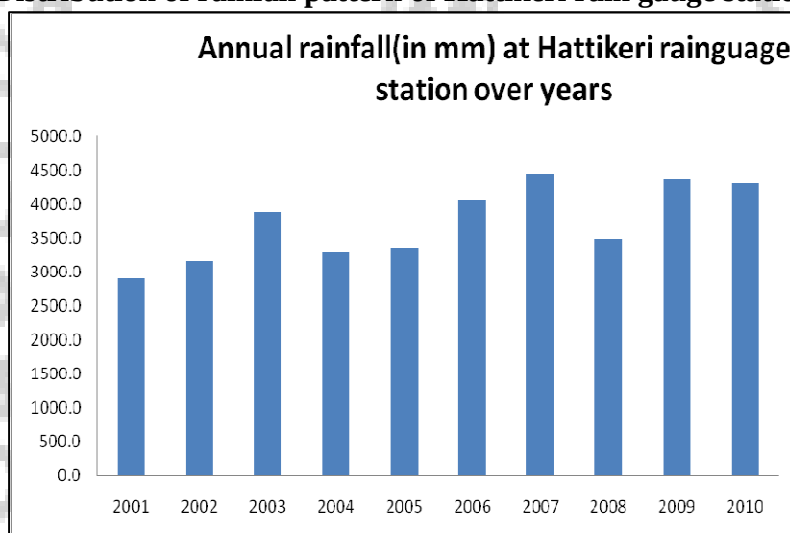
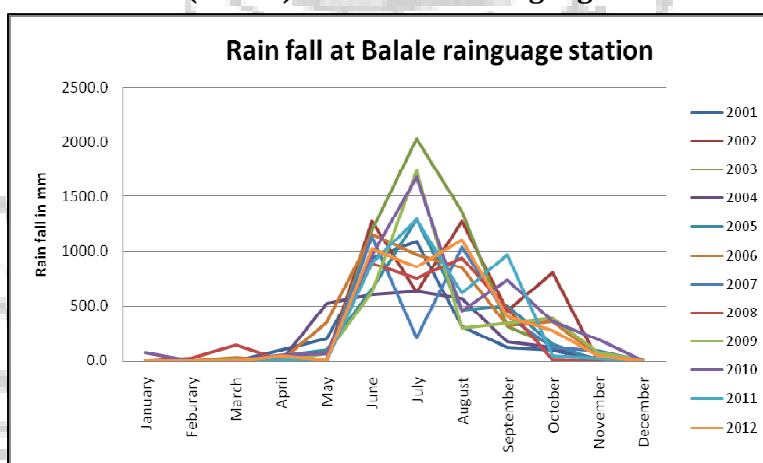


Fig 6: Annual rain fall (in mm) at Hattikeri rain gauge station from 2001 to 2012



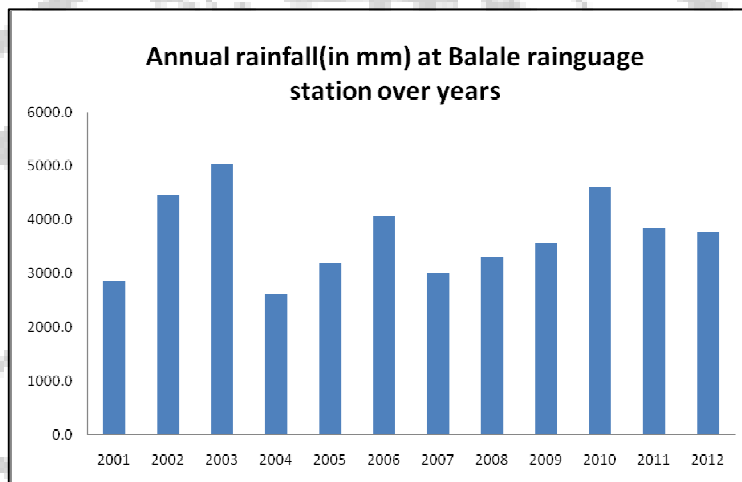


Fig 8: Annual rain fall (in mm) at Balale rain gauge station from 2001 to 2012

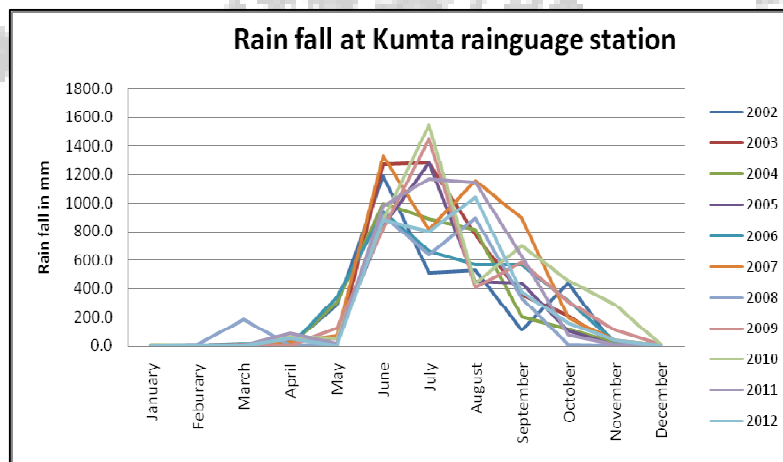


Fig 9: Distribution of rainfall pattern of Kumta rain gauge station from 2001 to 2012

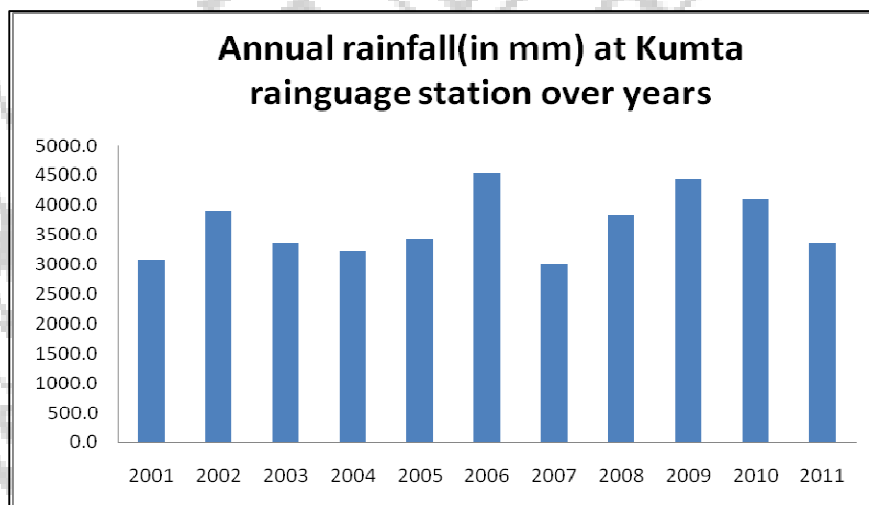


Fig 10: Annual rain fall (in mm) at Kumta rain gauge station from 2001 to 2012

Table 1: Annual Rainfall in different rain gauge stations over years

Rainfall in different rain gauge stations over years					
	Karwar rain gauge station	Ankola rain gauge station	Hattikeri rain gauge station	Balale rain gauge station	Kumta rain gauge station
2001	2635.0	2935.4	2901.8	2855.5	3248.4
2002	2778.6	3049.5	3148.5	4460.3	3083.1
2003	3343.5	4133.6	3884.5	5031.2	3902.6
2004	2813.8	2937.8	3285.7	2626.0	3345.2
2005	3135.1	3192.2	3357.6	3193.3	3202.8
2006	3725.7	3562.4	4054.8	4070.8	3427.8
2007	3800.9	4054.9	4432.0	3010.0	4528.7
2008	2832.1	3377.0	3475.0	3294.6	2995.5
2009	4010.5	4077.4	4347.2	3564.6	3814.5
2010	4343.1	4663.5	4299.6	4593.1	4430.2
2011	3488.7	3759.4	3860.1	3849.0	4098.3
2012	3035.5	3313.2	3441.6	3753.6	3348.1
Average over 12 years	3328.5	3588.0	3707.4	3691.8	3618.8

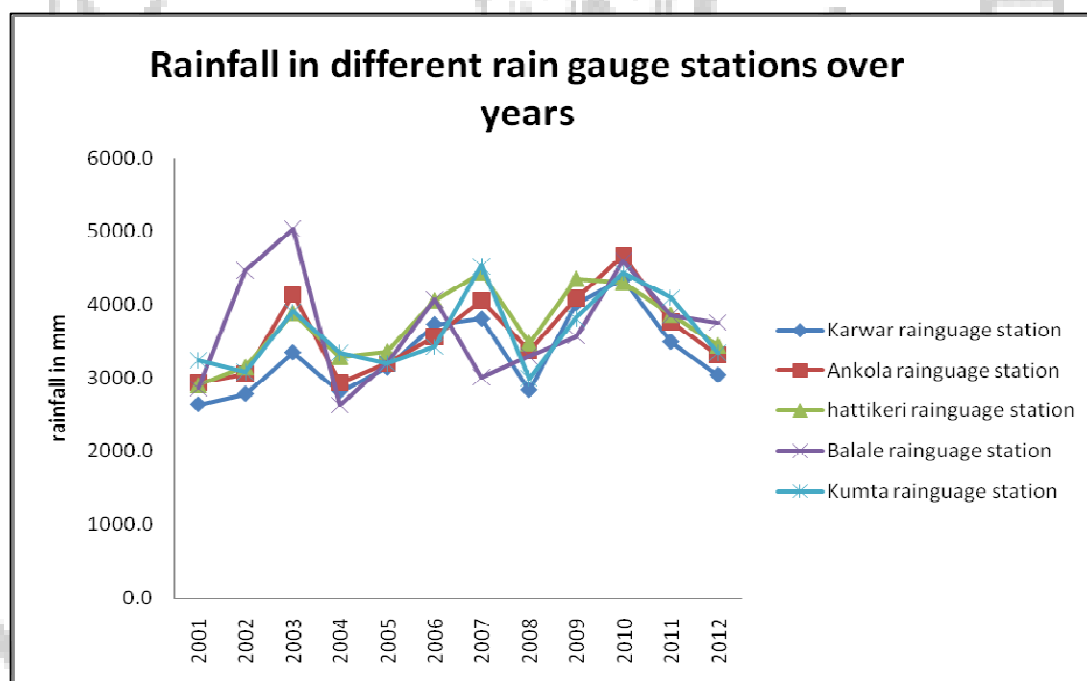


Fig 11: Annual Rain fall distribution in different rain gauge stations over years

4.9. SLOPE EROSION CONDITION (LHEF RATING 1)

The slope erosion ratings were given as per modified GSI guidelines (refer section 3.2.9). The western Ghats are relict mountains having very low relative relief, the deep gully/rill erosion of the slope is quite uncommon in such a matured hilly terrain with high land cover of the slopes, but anthropogenic activity in the form of slope cutting for construction of roads certain patches of NH-17 shows the gully erosion. 40 facets are affected by Deep gully erosion and rating of 0.5 has been assigned to them (Photo 11 & 12). As the slope erosion conditions are very shallow in depth the map cannot be prepared but the ratings where erosion is in process have duly assigned (refer Annexure-III).

4.10. LANDSLIDE INCIDENCE (LHEF RATING 2)

The landslide incidence ratings were given as per modified GSI guidelines (refer section 3.2.10). Earlier data on inventory (Mishra & Pradhan, 2010 and Maruthi & Chandran, 2012³) was checked and 7 landslides between Karwar & Mundarali which were not in inventory data are included subsequent to field check (Photo 10, 11 & 12). A total of 40 Landslide incidences were recorded (Plate 9) and the unique slide ID numbers of inventory are given with all the inventory parameters in Annexure-2. 611 facets have no landslides with rating of 0.0, 1 facet has dormant landslide with rating of 0.5, 13 facets have one active landslide with rating of 1.0 and 12 facets have more than one slide with rating of 2.0 (refer Annexure-III & Photo 4).

Konkan rail route also passes through the area was also checked for landslide incidence. The data on landslide incidence was collected from Konkan rail authorities and it was observed that though some minor incidences of rock falls are seen there is no major landslides registered in the Konkan rail route between Kumta & Karwar for last 5-6 years. It is appreciable that the rail authorities have taken adequate measures to control triggering of landslide by providing effective preventive measures like bolting, wire meshes, toe walls wherever there is chance of rock falls are there (Photo 7). The major part of hillocks where Konkan rail route passes are made through tunnels thus minimising the cutslope and Landslides.

4.11. TOTAL ESTIMATED HAZARD (TEHD) OF EACH FACET

The TEHD of the facet is calculated after adding the LHEF (Landslide Hazard evaluation Factor) values of all ten geo-environmental parameters encompassing the particular facet (Annexure-III & III A).

4.12. LANDSLIDE HAZARD SUSCEPTIBILITY ZONATION

The TEHD values are indicative of susceptibility of a slope to failure. Based on the TEHD values facets were grouped to classify the investigated area into i) Very low hazard zone ii) Low hazard zone iii) Moderate hazard zone iv) High hazard zone and v) Very high hazard zone and the final output Landslide Hazard Zonation map (Annexure-III, Table 2 & Plate 10).

The landslide Hazard map reveals that Major part of the area falls under the category of very Low Hazard zone (VLHZ)-58.24% followed by low hazard Zone (LHZ)-37.36%, Moderate Hazard zone (MHZ)-2.67% and High hazard zone (HHZ)-1.73%. Very high hazard zone (VHHZ) is absent (Fig 13). The characteristics of different zones have been described below.

Very Low Hazard zone: This category forms the major part of the study area and is distributed all over and is mainly includes the flat agricultural lands in the valleys and the low lying areas having very low relative relief.

Low Hazard zone: It is second major category of the investigated area occurring at scattered locations.

Moderate Hazard zone: The moderately hazard zone lies along NH-17 corridor and is mostly restricted to area between Ankola-Karwar.

High Hazard zone: This catagory is restricted to the facets falling either side of NH-17 between Ankola-Karwar.

Very High Hazard Zone: The zone is not found in this area.

Table 2: Distribution of different Hazard classes in the investigated area

Type of Hazard zones	No.of facets	% of total facets
Very Low Hazard Zone(VLHZ)	371	58.24
Low Hazard Zone(LHZ)	238	37.36
Moderate Hazard Zone(MHZ)	17	2.67
High Hazard Zone(HHZ)	11	1.73
Very High Hazard Zone(VHHZ)	0	0.00

Facets which are grouped under Moderate hazard Zone(MHZ) are having TEHD value ranging between 7.05-7.20 can be converted to low hazard zone by effectively implementing the remedial measures like plantations of tress, slope modification in the form of benches and proper drainage facilities. Likewise 4 facets which are grouped under Low hazard zone (LHZ) are having TEHD value ranging from 6.9-7.0 is in the danger of going in to MHZ zones if remedial measures are not implemented.

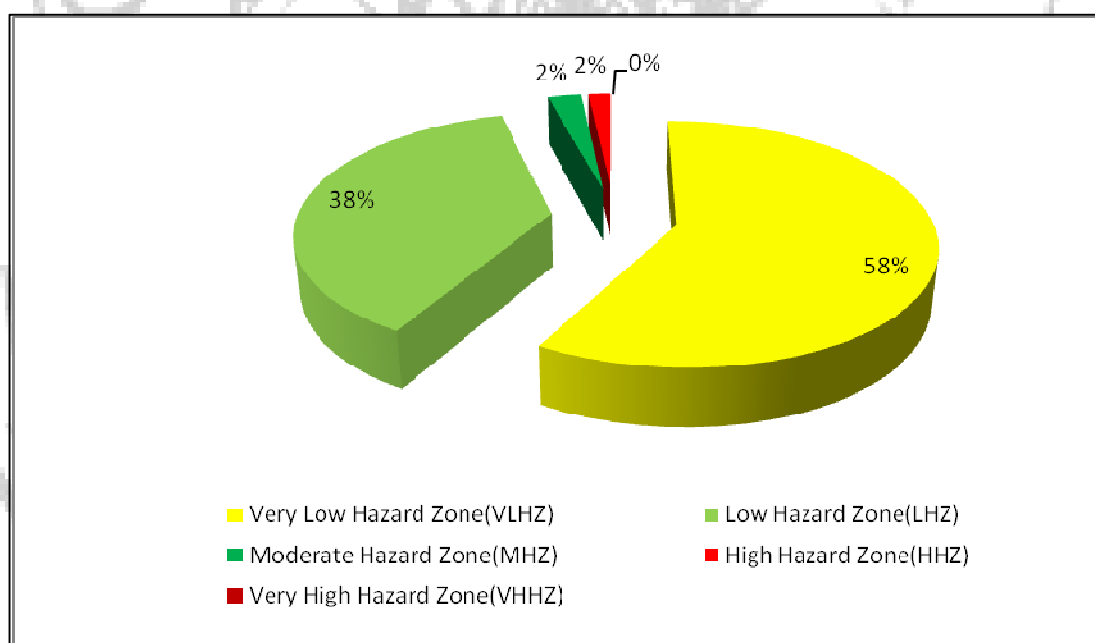


Fig 13: Pie diagram showing the hazard zone distribution.

5. DISCUSSION

Analysis pertaining to facets where the landslide incidences are observed (Table 3) reveals that maximum number of landslides have occurred in facet no 456 and 487 (3 slides) followed by facet nos 30, 67, 163, 336, 450, 500, 600 (2 slides each) and single slide is noticed in 15 facets. Lithologically most of the slides occurred (19 slides) where lithology is granite/weathered granite followed by laterite (15 slides) and granite gneiss/weathered granite gneiss (5 slide). One landslide is observed on the soil cover where bedrock is missing is an earth slump. The slope morphometry studies indicate that, landslides occur in three slope categories viz., very gentle slope, gentle slopes and moderately gentle slope. Likewise under the Landcover parameters, the thickly vegetated forest area shows 15 landslide incidences mainly due to anthropogenic activity in the form of slope cutting while 20 slides occurred in moderately vegetated area and 4 slides in sparsely vegetated area. Landuse parameter indicates that 28 landslides observed in Major communication routes involving extensive slope cutting and 7 landslides in thickly populated slope modified by large scale excavation (includes the disastrous Kadwad and Sasanwad slide) and 4 landslides in moderately populated slope/village roads indicating the landslides are result of anthropogenic activity. In case of relief parameters, landslides occur in low and medium relief categories. Hydrologically, 32 landslides seen in wet conditions and 7 landslides in flowing conditions. Under slope erosion parameter all the landslides are experiencing deep gully erosion. All the landslides sites observed receive more than 2000 mm of rainfall. The above observations show that landslides usually are not caused by a single parameter but the resultant effect of many parameters. The analysis also validates the using various parameters for landslide hazard zonation. The result of zonation is satisfactory as out of 11 High hazard zones all the zones recorded landslides. The present study also reveals that the occurrence of landslides clearly shows that extensive slope cutting, a sub parameter of land use and rainfall are the major factors in inducing landslide and creating HHZ in the area.

The Macroscale LHZ map of the study area is a derivative and dynamic map incorporating various geoenvironmental parameters and the thematic maps covering themes like geology, structure, landuse, landcover, slope aspects, hydrology, rainfall etc. The landslide hazard map in general gives an overall picture of the slope condition with respect to its stability. The map can be very well utilized as base map for any future development activity or maintenance of the existing plan. However, any modification and change in the present condition of the parameter either individually or collectively may affect the present status of LHZ map.

Table 3: Landslide hazard zonation in relation to landslides in the area

Facet no	Rock type	No of landslide incidence	Slope Rating	Relief rating	Land cover Rating	Land use Rating	Hydrology Rating	landslide Rating	Erosion rating	Rain Rating	TEHD	Zonation
24	Laterite	1	0.5	0.15	0.8	1.0	0.5	1.0	0.5	0.6	7.3	MHZ
30	Laterite	2	0.5	0.15	0.6	1.0	1.0	2.0	0.5	0.6	8.6	HHZ
32	Laterite	1	0.5	0.15	0.6	1.0	0.5	2.0	0.5	0.6	8.1	MHZ
35	Laterite	1	0.5	0.15	0.6	1.0	1.0	1.0	0.5	0.6	7.45	MHZ
67	Laterite	2	0.5	0.15	0.8	0.5	0.5	2.0	0.5	0.6	7.8	MHZ
85	Laterite	1	0.5	0.30	0.6	0.5	0.5	1.0	0.5	0.6	5.75	LHZ
98	Soil cover	1	0.5	0.15	0.6	0.5	1.0	1.0	0.5	0.6	7.1	MHZ
157	Granite gneiss	1	0.5	0.30	0.4	1.0	1.0	1.0	0.5	0.6	7.5	MHZ
158	Granite gneiss	1	0.5	0.15	0.4	1.0	1.0	1.0	0.5	0.6	7.35	MHZ
162	Granite gneiss	1	0.5	0.30	0.4	1.0	0.5	1.0	0.5	0.6	8.0	MHZ
163	Granite gneiss	2	0.5	0.30	0.4	1.0	0.5	2.0	0.5	0.6	9.0	HHZ
336	Granite	2	1.2	0.15	0.6	1.0	0.5	2.0	0.5	0.6	9.15	HHZ
337	Granite	1	1.2	0.50	0.6	1.0	0.5	1.0	0.5	0.6	8.5	HHZ
450	Granite	2	0.8	0.30	0.4	1.0	0.5	2.0	0.5	0.6	8.7	HHZ
455	Granite	1	0.8	0.30	0.6	1.0	0.5	1.0	0.5	0.6	7.9	MHZ
456	Granite	3	0.8	0.30	0.6	1.0	0.5	2.0	0.5	0.6	8.9	HHZ
458	Granite	1	0.8	0.30	0.4	1.0	0.5	1.0	0.5	0.6	7.7	MHZ
468	Granite	1	0.8	0.15	0.6	1.0	1.0	0.5	0.5	6.0	7.95	MHZ
487	Granite	3	0.8	0.15	0.4	1.0	0.5	2.0	0.5	6.0	8.55	HHZ
499	Granite	1	1.2	0.15	0.4	1.0	0.5	1.0	0.5	6.0	7.95	MHZ
500	Granite	2	0.8	0.15	0.4	1.0	0.5	2.0	0.5	0.6	8.55	HHZ
522	Granite	1	0.5	0.15	0.4	1.0	0.5	1.0	0.5	0.6	7.45	MHZ
580	Laterite	3	1.2	0.15	0.6	0.5	0.5	2.0	0.5	0.6	9.1	HHZ
600	Laterite	2	0.5	0.15	0.6	0.7	0.5	2.0	0.5	0.6	8.9	HHZ
606	Laterite	1	0.8	0.15	0.6	0.7	0.5	2.0	0.5	0.6	8.7	HHZ
636	Granite	1	0.5	0.15	0.8	0.7	0.5	1.0	0.5	0.6	7.95	MHZ

6. SUMMARY

The landslide hazards, in general cannot be completely prevented, however, the intensity and severity of their impacts can be minimized if the problem is recognized before the development activity. The Landslide Hazard Zonation in Macro scale (1:25,000 scale) 1km on both side of the communication routes Kumta-Karwar(up to Mundrali village) was taken up. A total area of 60 Lkm and 120sq km was covered. The area of investigation is demarcated approximately 1km on both sides of the communication routes Kumta-Karwar-up to Mundrali village falling in parts of toposheet no 48 J/7/NE, 48J/6/SE, 48J/6/SW, 48/J/NW, 48/J/2/NE, 48/J/1/SE and 48/J/1/SW

During investigation it is observed that majority of the slides are debris slides occurred due to cutting of the natural slope for making road. The vertical cut slopes have failed due to heavy rain in the ghat section during monsoon.

1. Maximum number of facets belong to very gentle slopes $<15^{\circ}$ (393 facets) followed by Gentle slopes $16^{\circ} - 25^{\circ}$ (191 facets) and moderately steep slopes $26^{\circ} - 35^{\circ}$ (52 facets) with only 1 facet is having steep slope $36^{\circ} - 45^{\circ}$.
2. Lithologically the studied area is represented by different lithounits namely Amphibolite, Granite gneiss, Karwar granite, Hornblend-actinolite-chlrte schist, pyroxenite talc-tremolite schist, quartzite, Vanidiferous titano magnetite, dolerite and laterite. The soil cover predominates over the Lithology and soil cover are generally dark brown to dark reddish brown and black in colour due to the accumulation of high organic matter under the forest cover. 114 facets have gneiss, 9 facets have schist, 250 facets have granite and 75 facets have laterite as Lithology. 189 facets do not have any litho exposure and are covered by soil.
3. The regional strike of bedding swerves from NNE-SSW to NNW-SSE with $10-85^{\circ}$ westerly or easterly dips. The rocks are traversed by four different set of joints.
4. The relief of the area even though reaches up to 430m above msl, the relative relief of the slopes in the study area lies in all three categories. Category I (low relative relief with <100 m height) has 460 facets with rating of 0.3, category II (Medium relative relief with 101m-300m height) has 167 facets with rating of 0.6 and Category III (high relative relief with >300 m height) has 10 facets with rating of 1.0.
5. No barren land found in the area. 332 facets are grouped under thickly vegetated forest area with rating of 0.4 followed by 208 facets under moderately vegetated area with rating of 0.6 and 97 facets with sparsely vegetated area with lesser ground cover with rating of 0.8
6. 160 facets are grouped under moderately populated slopes/village roads with rating of 0.5 followed by 146 facets under agricultural land with rating of 0.2, 78 facets under Major communication route involving extensive slope cutting, 17 facets under thickly populated slopes modified by large scale excavation and 236 facets with no particular Landuse.
7. Most of the study area is having wet or flowing conditions with rating of 0.5 & 1.0 respectively. 476 facets are having wet conditions with rating of 0.5 and 161 facets are having flowing/spring conditions with rating of 1.0. Dry condition is not observed in any facet as the ratings were

given after the monsoon season so many of the facets which would have been dry in summer is wet after rainy season

8. Rainfall data for five stations were collected in the study area viz., Karwar, Hattikeri, Ankola, Balale and Kumta. It is found that all the stations receive average annual rainfall in the range of 3400 mm to 3600 mm. The study area between Karwar & Kumta falls in the range of average rainfall > 2000 mm and rating for LHZ studies was given as 0.6.
9. 40 facets are affected by Deep gully erosion and rating of 0.5 has been assigned to them.
10. 611 facets have no landslides with rating of 0.0, 1 facet has dormant landslide with rating of 0.5, 13 facets have one active landslide with rating of 1.0 and 12 facets have more than one slide with rating of 2.0.
11. The landslide Hazard map reveals that Major part of the area falls under the category of very Low Hazard zone (VLHZ)-58.24% followed by low hazard Zone (LHZ)-37.36%, Moderate Hazard zone(MHZ)-2.67% and High hazard zone (HHZ)-1.73%. Very high hazard zone (VHHZ) is absent.

7. RECOMMENDATIONS

Based on the present study the following recommendations are made and should be taken up by the town planners prior to any development activities.

1. Proper drainage should be maintained. It is seen that at many places either drainage at toe is absent or not maintained properly. The drainage on slope is also paramount; the water from the hill may be diverted in the following ways in order to minimize the slide

- i. Making contour drainage at the top of the slopes
- ii. The catch water drains in the sections
- iii. Inserting horizontal perforated pipes in to the slopes which will act as weep holes in the vertical slopes thus reducing the pore pressure by draining out the excess water. This is to be given at suitable interval as per the site condition.

2. Vertical cut slopes should be avoided in future as it does not give stability in such terrain. Due care should be given to the cut slopes made for road construction and plantations either during cutting of the slope following proper slope stability practices or after cutting by providing suitable retaining structures. Retaining structures like retaining wall, stone pitching and gabions are recommended as per the site condition and also geometrical modification of the slope by grading and bench.

3. Plantations like vetriver may be planted which is best means to improve the slope stability conditions.

4. Spatial prediction of landslide potential slopes through landslide hazard zonation input is an important tool for disaster management. The different methods have their own merits and demerits. Since the landslide contributing factors vary from region to region, uniform rating criteria cannot be applied to different geo-environmental condition. The scheme of classifying factors responsible for landslides in Western Ghats should be worked out prior to taking up other landslide zonation projects in these areas.

LOCALITY INDEX

Locality	Latitude	Longitude	T. S. No.
Amadalli	14° 45' 42"	74° 13' 28.5"	48J/1/SE
Ankola	14° 39' 24"	74° 18' 27"	48J/6/NW
Arga	14° 46' 12"	74° 9' 34.5"	48J/1/SE
Aversa	14° 43' 34.5"	74° 17' 7.5"	48J/6/NW
Baitkal	14° 47' 43.5"	74° 6' 40.5"	48J/1/SW
Balale	14° 34' 18"	74° 22' 57"	48J/6/SE
Belase	14° 37' 4.5"	74° 21' 4.5"	48J/6/SW
Binaga	14° 47' 9"	74° 7' 45"	48J/1/SE
Hattikeri	14° 43' 15"	74° 17' 39"	48J/6/NW
Hiregutti	14° 34' 4.5"	74° 23' 16.5"	48J/6/SE
Kadwad	14° 50' 35.6"	74° 10' 36.4"	48J/1/SE
Karmane Gudda	14° 44' 57"	74° 15' 58.5"	48J/6/NW
Karwar	14° 48' 28.5"	74° 7' 46.5"	48J/1/SE
Kumta	14° 25' 30"	74° 24' 40.5"	48J/7/NE
Marur	14° 26' 12"	74° 28' 24"	48J/7/NE
Mirjan	14° 29' 7.5"	74° 25' 33"	48J/7/NE
Mudga	14° 45' 7.5"	74° 14' 32.5"	48J/1/SE
Mundrali	14° 50' 46.5"	74° 11' 1.5"	48J/1/SE
Sasanwad	14° 49' 19.6"	74° 10' 36.4"	48J/1/SE

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SYNOPSIS OF WORK DONE

1	Title of the report	LANDSLIDE HAZARD ZONATION OF KUMTA - KARWAR (UPTO MUNDRALI VILLAGE) ROAD CORRIDOR, UTTAR KANNADA DISTRICT, KARNATAKA			
2	Item No.	Code No.: LHZ/SR/KG/2013/071			
3	Field Season	2013-2014			
4	Date of commencement	01.04.2013			
5	Date of completion	31.03.2014			
6	Officers Associated with investigation	K.V.Maruthi, Superintending Geologist			
7	Quantum of work done				
	Sl. No	Nature of work	Total workload envisaged	Work proposed for FS 2013-2014	Work completed
	I	Preparation of thematic maps(on 1:25,000 scale)	60 L Km/ 120sq.km.	60L Km/ 120sq.km.	60 L Km/ 120sq.km.
		a)Slope Facet Map	-do-	-do-	-do-
		b) Slope Morphometry	-do-	-do-	-do-
		c) Lithology	-do-	-do-	-do-
		d) Structure	-do-	-do-	-do-
		e) Land use /land cover Map	-do-	-do-	-do-
		f) Relative Relief Map	-do-	-do-	-do-
		g) Hydro geological Map	-do-	-do-	-do-
		h)Landslide Incidences Map	-do-	-do-	-do-
		i) Annual rainfall data	-do-	-do-	-do-
	II	Preparation of Landslide hazard zonation/ Susceptibility map on macro scale (1: 25,000 scale) using BIS/ modified BIS code (GSI)	60 L Km/ 120sq.km.	60 L Km/ 120sq.km.	60 L Km/ 120sq.km.
8	Expenditure (1) POL (2) Wages (3) Misc.		- nil- Rs 5760=00 Rs 33,830=00 (Including charges of hiring vehicle)		
9	Other information if any		--		

**PHOTOGRAPHS OF LANDSIDE HAZARD ZONATION STUDIES BETWEEN
KUMTA & KARWAR (UPTO MUNDRALI VILLAGE) ROAD SECTION**



Photo 1: View of the NH-17 between Ankola-Karwar with Western Ghats at background



Photo 2: View of Western Ghats between Karwar-Mundrali with mixed dense forest



Photo 3: Two sets of joints in Granite near facet no 256



Photo 4: View of Kadwad landslide in which 19 people lost lives in facet no 606.



Photo 5: View of Arabian sea near Baitkal between Ankola-karwar.



Photo 6: View of lowlands used for paddy cultivation between Kumta-Ankola.



Photo 7: Effective remedial measures adopted by Konkan rail authorities to arrest landslides between Ankola-Karwar.



Photo 8: View of Marshy land which is used for prawn farm below the toe of the Sasanwad slide facet no 580



Photo 9: View of backwaters of Kali near Mundralli facet no 633 with Kadwad slide at background



Photo 10: Effective remedial measures in the form of toe wall near facet 67 between Kumta-Ankola



Photo 11: View of the landslide at facet 522 between Ankola - Karwar with gully erosion



Photo 12: View of the landslide with toe wall constructed at facet 636 near Mundrali village

YEAR WISE RAINFALL DATA OF DIFFERENT RAINGUAGE STATIONS

Month wise rainfall data of Karwar rain gauge station in mm

Year- 2001												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	8.0	0.0	0.0	0.0	0.0	0.0	57.0	3.2	1.0	64.4	0.0	0.0
2	2.4	0.0	0.0	0.0	0.0	0.5	83.1	21.2	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	2.8	122.3	0.3	0.0	0.0	0.0
4	0.0	0.0	0.0	0.4	0.0	0.4	3.7	6.8	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	42.6	27.8	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	14.6	4.0	0.0	0.7	20.8	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	82.9	16.2	10.2	6.6	1.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	23.4	11.0	4.1	0.0	13.6	0.0	0.0
9	0.0	0.0	0.0	0.2	0.0	20.2	67.6	11.6	0.0	14.5	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	16.2	11.0	8.2	0.0	0.9	0.0	0.0
11	0.0	0.0	0.0	6.2	0.0	16.0	15.4	1.7	0.0	0.9	0.0	0.0
12	0.0	0.0	0.0	21.4	0.0	64.2	4.0	7.4	0.0	3.2	0.0	0.0
13	0.0	0.0	0.0	11.5	0.0	12.5	13.4	3.9	0.0	1.9	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	21.8	29.0	18.2	0.0	20.6	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	17.0	10.5	5.6	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	7.9	14.0	6.0	0.0	0.2	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	3.4	8.2	20.6	2.5	1.3	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	1.2	15.5	30.5	0.0	3.2	0.0	0.0
19	0.0	0.0	0.0	0.0	1.3	8.1	18.8	29.1	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.9	19.7	2.4	5.3	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	10.8	34.9	3.1	20.8	0.5	1.0	0.0	0.0
22	0.0	0.0	0.0	0.0	20.2	140.0	7.1	16.2	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	75.0	6.6	30.0	1.9	7.6	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	50.5	0.0	14.7	18.4	30.4	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	32.8	20.4	60.5	11.1	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	46.4	4.6	61.6	6.5	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	2.2	4.6	61.1	2.1	3.8	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	8.0	36.0	9.8	8.9	17.7	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	29.2	109.0	75.0	0.2	1.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	1.3	58.6	65.6	2.4	66.2	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	3.1	0.0	19.6	2.2	0.0	0.0	0.0	0.0
Total	10.4	0.0	0.0	39.7	281.7	744.7	838.3	434.4	138.3	147.5	0.0	0.0
Annual rainfall in mm					2635.00							

Year- 2002												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	48.6	12.8	8.4	5.6	20.2	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	12.5	10.1	12.7	25.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	60.8	9.9	12.9	22.4	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	2.8	1.6	45.5	7.8	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.4	14.7	16.3	0.3	0.0	0.0
6	0.0	0.0	0.0	0.0	0.3	0.0	3.2	10.7	42.5	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	11.2	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	4.0	0.0	7.4	11.7	1.0	9.8	0.0	0.0
9	0.0	0.0	0.0	0.0	2.0	0.4	21.4	119.6	9.0	10.1	0.0	0.0
10	0.0	0.0	0.0	0.0	1.3	7.7	14.8	133.2	0.0	9.7	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	43.7	141.0	19.8	4.6	19.6	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	4.7	2.6	42.3	0.0	52.9	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	8.2	1.4	12.9	1.2	190.2	0.0	0.0
14	0.0	0.0	0.0	6.7	0.2	297.2	3.7	0.6	0.0	1.6	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	77.9	1.7	18.0	0.0	1.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	98.0	12.2	11.9	0.0	40.7	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	48.6	13.0	39.0	0.0	36.4	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	37.8	2.5	6.7	0.0	6.0	0.0	0.0
19	0.0	0.0	0.0	0.0	105.0	125.0	1.5	2.8	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	18.0	39.4	0.7	5.2	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	4.2	33.1	38.4	8.9	0.0	2.5	0.0	0.0
22	0.0	0.0	0.0	1.6	0.0	11.4	16.8	1.2	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	26.9	17.8	1.9	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	6.7	3.9	2.6	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	1.1	11.4	29.3	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.4	15.6	8.3	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	2.3	35.0	12.3	0.2	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	28.2	1.6	7.9	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.4	6.7	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	16.4	0.4	0.5	0.0	0.0	10.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	2.6	21.4	0.0	0.0
Total	0.0	0.0	0.0	8.3	183.4	1030.	394.0	581.0	149.2	432.4	0.0	0.0
Annual rainfall in mm					2778.6							

Year- 2003													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	0.0	85.8	12.9	35.5	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	36.0	21.0	4.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	38.9	10.9	16.9	8.2	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	69.2	21.4	3.6	11.4	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	97.2	105.8	1.1	2.5	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.0	49.9	4.3	43.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	3.0	159.5	36.6	9.5	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	0.0	26.2	20.9	10.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	19.6	25.3	12.9	14.1	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	3.7	52.9	0.0	2.7	2.6	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	37.4	34.9	1.4	0.6	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	30.4	11.2	15.6	10.2	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	52.6	7.3	2.8	3.5	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	12.2	153.2	0.8	13.4	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	69.4	66.8	13.7	0.0	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	133.4	74.8	24.2	25.3	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	95.0	12.9	5.6	25.0	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	83.1	1.0	15.4	2.4	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.2	39.4	6.8	69.1	0.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	204.6	7.2	21.5	1.6	0.8	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	107.2	1.2	30.5	0.0	32.6	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	195.8	1.8	3.5	0.0	5.2	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	14.8	41.7	5.0	0.5	8.5	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	33.6	16.2	7.2	0.6	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	11.8	16.0	8.4	18.7	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	6.0	20.4	14.0	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.6	0.0	0.0	87.8	23.9	2.0	0.3	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	4.4	13.4	0.0	29.9	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	0.0	4.6	12.4	3.1	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	18.3	7.8	29.9	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	3.0	35.2	0.0	0.0	0.0	0.0
	Total	0.0	0.0	0.6	0.0	0.2	1268.1	1174.	555.6	272.4	71.8	0.0	0.0
Annual rainfall in mm						3343.5							

Year- 2004												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	47.6	0.0	47.8	1.6	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	82.6	10.2	24.6	0.0	1.8	14.4	0.0
3	0.0	0.0	0.0	0.0	1.0	0.0	11.5	90.8	0.0	8.7	53.4	0.0
4	0.0	0.0	0.0	0.0	0.0	1.4	6.2	45.3	0.0	62.2	0.0	0.0
5	0.0	0.0	0.0	0.0	2.4	21.0	1.2	6.4	0.0	51.0	0.0	0.0
6	0.0	0.0	0.0	0.0	13.0	35.2	31.8	6.8	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.2	3.2	0.0	13.2	4.8	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	12.0	79.8	0.0	27.0	29.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	2.4	101.7	30.2	8.1	14.3	0.0	2.0	0.0
10	0.0	0.0	0.0	0.0	2.3	72.4	9.5	24.2	43.6	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	3.0	17.5	39.2	10.0	24.8	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.8	8.7	46.2	29.4	24.1	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.8	13.0	45.1	142.5	2.7	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	19.6	22.5	12.1	34.0	0.2	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	14.5	13.3	6.7	4.1	6.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	46.2	19.5	30.2	16.9	1.7	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	6.9	15.3	22.0	29.0	0.4	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	71.6	2.2	2.0	28.4	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	26.2	2.9	15.6	8.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	19.2	0.0	46.8	2.2	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	2.2	0.0	48.3	14.2	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	2.4	0.0	12.2	1.8	61.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	2.9	0.0	20.2	13.4	2.4	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	5.0	0.0	35.4	14.8	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	1.4	7.2	7.2	15.8	0.5	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	101.5	42.4	0.6	0.5	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.5	38.1	19.0	4.0	42.2	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	2.7	11.4	5.5	1.3	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	1.6	15.6	0.2	11.6	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	9.8	12.8	45.6	0.0	2.2	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	2.1	0.0	60.5	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	271.1	732.4	678.4	664.8	273.6	123.7	69.8	0.0
Annual rainfall in mm					2813.8							

Year- 2005													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	13.2	8.8	3.5	0.4	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	19.9	23.2	20.3	0.0	0.0	0.0	0.2
	3	0.0	0.0	0.0	0.0	0.0	0.0	14.8	5.1	1.6	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	8.6	6.4	18.5	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	121.7	6.5	2.5	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	1.2	28.8	5.1	42.1	0.0	0.0	0.0
	7	0.0	0.0	0.0	3.2	0.0	36.3	5.0	6.4	2.5	0.0	0.0	0.0
	8	0.0	0.0	0.0	5.8	0.0	12.0	2.6	35.0	1.3	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.0	2.4	94.6	6.8	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	2.1	3.0	18.1	10.3	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	18.4	10.3	4.3	7.7	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	17.8	124.5	0.8	33.4	38.6	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	0.0	68.7	0.0	20.2	36.9	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	5.4	39.1	4.3	23.8	32.9	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	2.5	0.0	6.1	4.8	0.0	0.0	0.0
	16	0.0	0.0	0.0	58.2	0.0	24.2	0.8	0.4	6.5	6.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	19.2	1.9	29.9	2.1	10.6	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	81.0	20.4	57.4	0.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	26.3	0.9	3.4	18.0	30.2	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	90.4	58.6	0.4	52.9	2.3	0.0	0.0
	21	0.0	0.0	0.0	23.6	0.0	122.8	13.1	5.5	8.9	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	234.9	54.0	8.5	43.5	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	104.2	72.3	0.5	59.6	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.8	0.0	23.4	145.8	0.7	9.9	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	4.5	159.0	14.6	1.8	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	11.2	3.0	14.3	14.0	1.2	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	4.1	12.6	0.0	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	15.2	37.1	0.0	0.0	0.1	0.0	0.0
	29	0.0	0.0	0.0	0.0	28.5	48.8	39.4	0.0	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	16.4	25.5	47.7	0.0	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0
	Total	0.0	0.0	0.0	91.6	56.1	956.3	1141.2	351.8	380.3	157.6	0.0	0.2
Annual rainfall in mm					3135.1								

Year- 2006													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	De	
	1	0.0	0.0	0.0	0.0	0.0	68.7	2.0	33.9	14.8	1.2	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	70.4	26.5	8.0	1.1	27.4	31.7	0.0
	3	0.0	0.0	0.0	0.0	1.6	5.8	21.8	25.6	0.0	81.3	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	35.3	5.5	5.6	0.0	48.6	5.1	0.0
	5	0.0	0.0	0.0	0.0	0.0	3.8	9.5	6.2	0.0	24.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	21.8	20.2	33.8	0.0	37.0	0.4	0.0
	7	0.0	0.0	0.0	0.0	0.0	5.2	11.3	16.4	0.0	9.3	1.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	15.3	158.3	112.8	0.0	27.9	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.2	5.0	10.2	22.0	0.0	36.3	0.0	0.0
	10	0.0	0.0	3.3	0.0	0.0	9.0	8.1	24.9	10.4	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	15.3	16.3	26.8	0.0	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	5.1	7.4	8.0	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	5.2	13.5	12.9	52.1	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	0.0	16.3	15.6	102.3	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	0.0	7.9	31.8	83.7	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	0.0	3.2	50.5	73.9	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	3.2	6.2	12.2	34.6	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	0.0	49.0	136.4	18.6	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	0.0	27.9	31.9	23.6	0.0	0.0	0.0
	20	0.0	0.0	1.0	0.0	0.0	0.0	14.0	3.9	3.6	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	3.6	3.6	3.7	2.5	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	0.0	20.2	15.9	28.8	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.4	0.1	8.3	1.6	36.4	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.7	335.8	43.4	0.1	0.8	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	53.4	6.8	0.0	0.8	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.6	143.0	8.7	0.0	51.4	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	3.3	65.6	42.6	0.0	3.6	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	23.7	18.7	26.7	24.4	0.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	7.8	69.0	1.7	0.5	0.8	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	439.8	15.2	20.9	4.5	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	91.2	0.0	15.0	0.7	0.0	0.0	0.0	0.0
	Total	0.0	0.0	4.3	0.0	569.3	973.5	633.0	670.6	543.8	293.0	38.2	0.0
Annual rainfall in mm						3725.7							

Year- 2007													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	1.1	13.0	2.0	118.1	16.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	21.8	28.0	96.4	84.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	46.8	26.4	96.1	80.2	2.8	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	2.7	55.3	47.2	63.1	21.8	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.2	22.4	103.6	10.8	0.0	2.5	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.0	1.2	89.8	10.0	0.0	1.6	0.0
	7	0.0	0.0	0.0	0.0	0.0	4.8	4.2	73.6	32.9	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	0.0	24.8	28.3	9.6	0.7	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.5	18.2	9.0	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	34.6	33.9	4.8	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	11.3	21.7	10.6	0.0	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	38.2	0.6	0.8	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	75.8	17.4	7.6	0.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	21.4	10.2	6.2	3.3	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	37.6	0.3	29.0	18.6	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	103.3	9.8	0.0	22.0	0.0	0.0	0.0
	17	0.0	0.0	0.0	2.0	0.0	54.2	23.8	0.0	0.6	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	71.8	0.4	0.0	25.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	29.6	3.4	5.7	5.7	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	89.4	4.3	21.0	7.8	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	30.8	9.0	32.1	2.6	0.0	0.0	4.4
	22	0.0	0.0	0.0	0.0	0.0	143.2	66.8	9.4	2.1	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	2.8	205.8	62.5	58.2	10.5	1.4	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	83.6	6.9	7.2	43.8	0.4	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	44.8	17.6	3.2	26.5	0.7	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	37.2	9.7	42.2	4.5	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	23.5	60.0	16.3	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	6.4	13.0	53.8	14.8	3.8	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	85.0	71.8	38.4	18.3	34.9	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.8	38.1	42.4	30.2	32.9	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	16.4	0.0	44.2	50.8	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	2.0	111.	1336.9	730.6	914.4	653.3	43.8	4.1	4.4	
Annual rainfall in mm					3800.9								

Year- 2008												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	55.7	28.7	17.3	0.7	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.2	13.9	0.6	3.8	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.2	1.1	9.5	0.0	0.0	0.0	26.1
4	0.0	0.0	0.0	0.0	0.0	1.0	5.8	22.1	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	22.0	12.9	0.6	0.0	1.4	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	31.9	13.9	4.2	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	84.5	13.6	26.4	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	103.7	8.7	41.2	122.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	113.6	8.2	41.7	28.6	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	61.8	4.0	90.4	95.4	6.3	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	103.9	2.2	119.0	66.7	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	48.7	0.0	85.9	37.6	0.0	1.0	0.0
13	0.0	0.0	0.0	0.0	0.0	159.3	4.4	69.9	37.7	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	29.9	1.4	56.2	9.5	0.0	0.0	0.0
15	0.0	1.1	0.0	0.0	0.0	8.7	0.3	40.7	10.1	0.0	0.0	0.0
16	0.0	2.2	0.0	0.0	0.0	18.8	37.8	12.7	26.8	0.0	0.0	0.0
17	0.0	0.0	0.5	0.0	0.0	17.8	1.6	11.7	2.6	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.8	2.5	49.0	0.4	10.5	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	2.6	21.3	11.7	8.2	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	4.0	25.8	0.7	2.8	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	2.2	1.0	2.2	0.3	5.6	0.0	0.0	0.0
22	0.0	0.0	16.8	0.0	5.0	2.4	0.8	0.7	1.2	0.2	0.0	0.0
23	0.0	0.0	5.3	2.7	5.2	2.8	5.8	1.0	0.0	1.7	0.0	0.0
24	0.0	0.0	0.4	0.0	0.8	0.0	5.6	1.6	0.0	3.8	0.0	0.0
25	0.0	0.0	7.1	0.0	0.7	1.2	77.3	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	50.2	0.0	0.2	13.8	51.3	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	6.0	0.0	32.7	6.5	29.3	0.3	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.2	17.4	61.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.1	18.2	19.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	10.9	9.2	31.2	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	3.9	0.0	18.1	0.0	0.0	0.0	0.5	0.0
Total	0.0	3.3	86.3	2.7	62.7	943.3	556.2	666.8	469.8	13.4	1.5	26.1
Annual rainfall in mm					2832.1							

Year- 2009													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	0.0	32.2	4.0	19.9	38.5	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	1.2	141.0	0.2	57.9	179.6	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	12.8	142.2	4.5	30.0	423.6	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	66.5	4.1	38.4	34.9	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	20.5	83.2	21.6	64.0	1.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	108.6	98.0	39.6	49.6	10.4	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	165.3	71.8	2.8	26.4	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	20.4	102.6	1.6	8.8	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	10.8	108.1	0.4	1.0	0.0	2.6	0.0
	10	0.0	0.0	0.0	0.0	0.0	20.6	32.1	0.5	17.3	0.0	8.2	0.0
	11	0.0	0.0	0.0	0.0	0.0	19.2	40.9	16.8	2.4	0.0	59.3	0.0
	12	0.0	0.0	0.0	0.0	0.0	0.2	5.0	10.4	41.8	0.0	32.9	0.0
	13	0.0	0.0	15.0	0.0	0.0	0.6	8.0	11.6	0.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	0.0	28.0	5.5	0.0	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	11.9	41.2	1.5	10.7	0.4	0.3	0.0
	16	0.0	0.0	0.0	0.0	0.0	10.0	29.9	4.0	4.7	0.0	51.8	0.0
	17	0.0	0.0	0.0	0.0	0.0	48.0	3.2	2.0	0.0	0.0	0.4	0.0
	18	0.0	0.0	0.0	0.0	2.4	0.0	40.3	23.9	0.0	0.0	2.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	7.9	20.5	0.9	8.2	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	19.5	18.0	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.2	44.4	7.7	0.0	4.4	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	65.0	18.4	10.5	0.5	0.0	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	21.4	0.5	23.6	0.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	12.0	40.0	2.6	70.6	3.5	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	5.7	28.4	19.8	49.6	0.7	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	31.5	0.0	12.7	4.4	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	1.0	30.1	9.1	13.0	0.6	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	27.5	79.4	28.3	0.0	0.0	0.0	2.4
	29	0.0	0.0	0.0	0.0	0.3	21.3	47.2	33.4	6.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	40.4	24.8	10.6	118.2	0.0	0.0	1.5
	31	0.0	0.0	0.0	0.0	0.0	0.0	3.8	43.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	15.0	0.0	86.6	780.9	1318.1	441.2	518.9	688.4	157.5	3.9	
Annual rainfall in mm					4010.5								

Year- 2010													
Month	Jan	Feb	Ma	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	2.0	6.0	60.2	25.4	13.2	15.4	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	150.2	8.0	10.8	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	1.2	0.0	51.5	2.2	37.5	0.0	22.7	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	25.4	52.3	45.6	33.2	7.8	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	76.2	2.7	5.4	0.0	6.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.8	26.3	5.4	32.6	0.0	25.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	15.8	54.4	12.2	23.6	3.2	0.6	0.0
	8	0.0	0.0	0.0	0.0	0.0	70.9	14.4	18.6	17.2	0.0	7.2	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.0	14.2	0.0	36.4	0.0	207.4	0.0
	10	0.0	0.0	0.0	0.0	0.0	0.0	9.8	7.4	28.2	0.0	12.8	0.0
	11	0.0	0.0	0.0	0.0	0.0	0.0	0.4	24.2	13.5	0.0	1.2	3.2
	12	0.0	0.0	0.0	0.0	0.0	1.0	0.6	10.6	2.2	0.0	31.4	0.0
	13	0.5	0.0	0.0	0.0	0.0	13.7	17.6	11.8	6.4	1.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	49.7	9.2	1.7	5.7	0.6	0.0	0.0
	15	0.8	0.0	0.0	0.0	0.0	64.1	4.2	13.9	6.6	18.4	20.8	0.0
	16	0.0	0.0	0.0	0.0	0.0	63.0	57.2	12.8	28.5	1.6	7.2	0.0
	17	0.0	0.0	0.0	0.0	0.0	56.0	22.9	70.0	39.0	7.9	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	57.2	71.2	49.8	0.6	12.6	0.0	0.0
	19	0.0	0.0	0.0	0.0	7.8	30.8	68.4	32.5	20.0	72.2	5.5	0.0
	20	0.0	0.0	0.0	0.0	0.0	10.7	140.8	20.0	0.4	34.8	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	11.6	74.4	0.0	0.0	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	14.1	64.8	19.6	20.2	18.0	0.8	0.0
	23	0.0	0.0	0.0	5.3	0.0	31.4	20.2	0.0	0.0	66.3	41.4	0.0
	24	0.0	0.0	0.0	0.0	0.0	44.8	9.2	17.3	70.0	17.6	4.6	0.0
	25	0.0	0.0	0.0	0.0	0.0	86.6	36.0	47.3	0.0	0.6	1.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	112.4	36.2	52.8	11.8	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	2.7	58.0	8.7	33.9	3.2	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	15.6	34.3	20.6	51.2	0.0	0.0	0.0
	29	0.0	0.0	0.0	5.2	0.0	5.9	30.6	10.2	36.8	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.5	0.0	100.2	119.3	6.0	8.6	3.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	109.8	0.0	73.0	27.8	0.0	0.0	0.0	0.0
Total	1.3	0.0	0.0	11.0	123.5	920.3	1381.8	617.0	575.2	306.4	403.4	3.2	
Annual rainfall in mm					4343.1								

Year- 2011													
Month	Jan	Feb	Ma	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	4.4	13.8	8.0	80.4	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	2.2	65.3	38.8	27.2	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	184.4	82.4	70.6	13.8	0.0	2.8	0.0
	4	0.0	0.0	0.0	0.0	0.0	17.8	41.6	147.0	34.6	0.0	3.2	0.0
	5	0.0	0.0	0.0	0.0	0.0	33.2	13.4	8.7	6.0	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	29.2	14.2	3.0	8.8	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	26.0	11.6	29.8	25.2	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	16.6	53.0	9.0	23.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	16.9	3.0	2.7	12.4	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	57.6	10.2	0.0	0.2	0.0	0.0	0.0
	11	0.0	0.0	0.0	7.8	0.0	34.2	24.8	4.1	7.2	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	39.7	47.4	0.8	9.2	19.6	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	84.6	52.8	1.6	7.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	41.4	39.8	19.4	4.6	16.8	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	54.0	38.3	17.2	20.6	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	123.8	119.0	13.0	3.9	3.5	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	66.0	153.8	20.8	36.1	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	14.4	29.4	33.4	18.2	6.2	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	0.0	2.7	59.8	22.2	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	0.2	5.0	11.6	11.2	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	5.8	7.2	122.4	12.8	2.2	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	2.2	23.6	25.8	7.8	1.4	0.0	0.0
	23	0.0	0.0	0.0	10.6	0.0	69.5	44.6	0.7	0.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	4.4	11.6	26.6	0.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	0.4	1.0	3.8	0.0	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	10.6	11.4	11.5	0.0	14.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	1.8	69.7	16.8	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	8.8	19.0	6.6	0.0	1.8	0.2	0.0
	29	0.0	0.0	0.0	0.0	0.0	9.8	41.6	28.6	0.0	0.0	12.8	0.0
	30	0.0	0.0	0.0	0.0	0.2	3.9	47.8	49.3	0.0	5.6	3.4	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	66.4	63.6	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	18.4	0.2	963.8	1165.4	855.0	392.4	71.1	22.4	0.0	
Annual rainfall in mm					3488.7								

Year- 2012													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	0.0	20.4	1.0	42.9	2.8	0.6	0.0
	2	0.0	0.0	0.0	4.6	0.0	0.0	31.6	5.3	23.2	0.0	22.6	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.2	56.7	15.6	7.2	49.6	10.3	0.0
	4	0.0	0.0	0.0	0.0	0.0	25.0	9.0	15.3	37.2	99.8	4.2	0.0
	5	0.0	0.0	0.0	0.0	0.0	62.6	2.1	7.2	9.3	46.4	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	34.6	0.0	28.4	1.2	11.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	3.6	10.0	20.8	9.4	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	11.7	9.2	34.4	54.2	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	5.0	4.4	18.6	4.4	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	16.6	20.1	24.1	23.0	0.8	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	2.8	26.3	126.7	8.8	0.0	0.0	0.0
	12	0.0	0.0	0.0	66.6	0.0	54.8	16.9	35.4	7.2	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.3	0.0	15.2	12.4	33.2	6.7	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	41.1	65.1	3.6	16.1	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	7.0	21.0	17.2	2.2	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	27.3	37.8	12.6	8.4	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	19.4	66.8	16.7	0.4	0.0	0.0	0.0
	18	0.0	0.0	0.0	43.8	0.0	130.7	60.4	35.1	5.8	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	162.8	19.9	10.6	0.4	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	19.8	17.4	3.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	7.9	38.3	12.2	0.0	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	40.0	4.8	0.9	0.0	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	27.9	16.8	0.4	0.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	19.6	18.7	0.0	0.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	52.8	1.9	8.0	0.0	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	54.4	5.8	65.2	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	32.6	2.5	86.8	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	72.0	4.4	14.7	0.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	0.0	18.8	2.6	42.1	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	80.8	8.0	47.7	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
	Total	0.0	0.0	0.0	115.3	0.0	1047.0	614.3	742.8	268.0	210.4	37.7	0.0
Annual rainfall in mm					3035.5								

Month wise rainfall data of Ankola rain gauge station in mm

Year- 2001												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	8.2	0.0	0.0	0.0	0.0	1.2	87.4	13.6	1.0	23.4	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	31.8	20.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	11.6	31.4	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	18.2	38.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	64.2	72.6	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	48.0	1.4	0.0	17.6	30.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	106.2	19.0	4.0	2.0	3.2	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	29.6	19.0	7.6	0.0	9.6	0.0	0.0
9	0.0	0.0	0.0	1.6	0.0	42.2	44.8	11.2	0.0	8.6	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	48.4	23.0	6.4	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	22.2	0.0	27.6	28.6	20.4	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	5.2	0.0	36.4	41.4	9.6	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	14.8	0.0	8.2	3.0	9.0	0.0	26.6	0.0	0.0
14	0.0	0.0	0.0	10.8	0.0	46.4	35.4	32.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	39.6	0.0	44.4	36.6	17.4	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	6.2	30.2	3.8	0.0	4.2	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	6.2	2.6	53.4	26.4	1.6	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	4.6	9.0	33.0	0.0	7.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	4.8	12.4	20.0	0.0	2.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	15.8	7.4	3.8	1.2	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	2.8	24.8	2.4	23.4	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	2.0	138.2	6.4	33.8	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	1.2	19.2	0.0	20.0	9.4	34.4	0.0	0.0	0.0
24	0.0	0.0	0.0	4.4	13.4	0.2	25.2	28.8	32.8	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	44.8	59.2	65.2	9.4	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	13.8	5.4	48.8	1.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	6.4	25.8	48.6	0.0	3.4	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	13.2	63.4	22.4	11.4	12.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	47.4	64.8	53.8	4.0	28.2	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	7.8	66.6	60.2	0.0	35.2	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	2.4	0.0	9.4	1.4	0.0	0.0	0.0	0.0
Total	8.2	0.0	0.0	99.8	173.2	924.6	889.4	529.8	194.2	116.	0.0	0.0
Annual rainfall in mm					2935.4							

Year- 2002													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	4.5	12.4	4.0	2.0	3.2	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	3.4	6.2	5.2	17.2	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	36.0	6.6	18.2	21.6	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	2.6	5.4	76.8	9.4	11.6	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	1.2	19.0	17.2	0.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	6.8	0.0	1.4	21.8	40.6	0.0	0.0	0.0
	7	0.0	0.0	0.0	1.0	0.0	1.4	1.1	7.8	8.8	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	6.6	0.0	0.6	17.0	12.6	33.8	0.0	0.0
	9	0.0	0.0	0.0	0.0	2.2	0.0	6.4	141.8	44.0	2.2	0.0	0.0
	10	0.0	0.0	0.0	0.0	3.8	7.8	50.8	132.8	0.0	9.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	79.6	99.2	21.2	8.8	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	90.8	7.2	35.4	6.2	37.6	0.0	0.0
	13	0.0	0.0	0.0	0.0	3.7	5.2	6.4	61.0	0.0	108.6	0.0	0.0
	14	0.0	0.0	0.0	3.8	0.0	235.6	11.2	5.0	0.0	3.2	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	107.4	0.4	17.2	0.0	2.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	113.6	33.8	16.0	0.0	30.8	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	71.2	2.0	38.6	0.0	5.8	0.0	0.0
	18	0.0	0.0	0.0	0.0	3.8	62.4	1.4	13.6	0.0	2.4	0.0	0.0
	19	0.0	0.0	0.0	0.0	47.6	125.2	3.0	7.0	0.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	47.8	37.0	0.8	7.2	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.8	68.2	29.2	2.0	0.0	0.8	0.0	0.0
	22	0.0	0.0	0.0	3.0	0.0	53.2	46.8	8.0	0.0	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	32.4	13.2	11.2	0.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	13.4	6.4	7.6	0.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	19.0	10.0	47.2	0.0	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	4.6	13.6	7.2	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	44.8	15.0	8.4	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	7.4	17.4	13.2	0.0	0.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	7.4	0.4	8.8	0.0	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	31.8	5.4	0.0	0.0	5.4	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	12.0	0.0	0.0
	Total	0.0	0.0	0.0	7.8	170.5	1242.5	413.7	758.2	193.8	263.0	0.0	0.0
Annual rainfall in mm						3049.5							

Year- 2003													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	No	Dec	
	1	0.0	0.0	0.0	0.0	0.0	0.0	58.8	41.1	50.1	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	74.1	27.0	26.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	95.2	17.2	8.2	10.4	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	41.8	20.9	22.3	32.1	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	132.2	115.1	2.2	7.4	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.0	90.3	38.2	73.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	2.0	181.6	42.8	18.1	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	2.8	52.8	23.0	15.6	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	6.2	45.3	8.1	18.1	0.4	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	8.0	47.0	1.1	1.4	2.2	1.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	3.0	38.1	2.2	0.2	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	52.2	26.8	8.0	9.2	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	45.8	9.2	13.8	0.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	6.0	79.1	3.0	20.4	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	62.2	40.2	19.8	28.2	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	106.2	82.6	36.2	46.4	0.6	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	60.8	24.0	10.2	25.0	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	35.4	14.2	23.2	4.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	137.0	34.8	68.4	0.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	64.8	2.8	20.6	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	172.6	3.0	44.2	0.0	37.6	0.0	0.0
	22	0.0	0.0	5.4	3.2	0.0	390.2	16.6	3.6	0.0	18.2	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	37.7	36.2	4.0	0.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	6.8	78.4	2.8	3.6	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	13.2	5.6	11.6	8.5	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	62.0	13.6	11.8	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	24.0	28.4	7.6	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	18.2	10.4	1.2	18.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	0.0	37.8	39.7	26.6	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	111.6	6.6	32.2	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	2.0	53.2	0.0	0.0	0.0	0.0
Total	0.0	0.0	5.4	3.2	0.0	1466.5	1411.4	738.7	398.5	108.9	1.0	0.0	0.0
Annual rainfall in mm					4133.6								

Year- 2004													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	9.4	5.2	46.8	0.4	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	12.4	25.6	0.0	15.4	0.7	0.0
	3	0.0	0.0	0.0	0.0	14.2	2.0	36.0	65.8	0.0	3.2	65.4	0.0
	4	0.0	0.0	0.0	0.0	1.1	2.4	12.2	33.4	0.0	47.6	0.0	0.0
	5	0.0	0.0	0.0	0.0	2.8	12.2	5.4	43.8	0.0	96.4	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	46.4	10.2	22.0	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	14.2	0.0	8.2	10.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	98.2	0.0	34.6	15.1	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.1	80.2	11.8	14.4	26.0	0.0	24.4	0.0
	10	0.0	0.0	0.0	0.0	0.0	158.4	5.0	3.4	42.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.6	33.8	25.2	5.2	15.0	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.6	15.6	54.2	44.8	20.2	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	7.4	23.8	142.0	24.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.3	21.0	24.4	36.1	0.0	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	12.8	19.2	48.0	9.2	0.0	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	22.2	6.6	52.0	24.2	0.5	2.4	0.0	0.0
	17	0.0	0.0	0.0	0.0	28.4	16.4	55.2	21.8	0.0	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	50.6	10.4	11.4	28.2	0.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	7.1	6.0	5.2	10.4	0.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	21.4	0.4	17.8	25.6	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	2.6	32.0	27.8	0.0	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	14.1	0.0	24.4	7.2	53.8	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	18.2	0.2	32.4	15.8	0.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	8.2	0.0	24.2	13.2	0.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	9.0	8.8	8.2	10.2	0.2	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	3.8	66.2	61.4	2.8	0.1	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	36.6	32.0	34.0	0.0	46.8	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	4.4	10.4	10.8	0.0	0.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	0.0	8.4	35.2	0.0	1.4	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	3.0	6.8	36.0	0.0	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	1.4	0.0	33.8	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	260.9	695.6	747.8	722.5	255.5	165.0	90.5	0.0	
Annual rainfall in mm					2937.8								

Year- 2005												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	3.4	49.0	17.6	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	12.6	15.0	41.6	0.4	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	18.2	12.4	8.2	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	19.8	18.0	5.4	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	64.4	17.2	9.6	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	30.0	8.6	3.2	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	6.0	9.4	2.6	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	1.0	53.6	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	3.2	9.2	57.6	4.2	0.6	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	4.2	16.0	16.8	8.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	59.4	37.8	8.6	4.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	6.4	83.2	3.2	24.8	1.6	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	5.0	75.6	9.6	23.2	37.6	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	31.6	5.6	41.0	46.4	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	8.2	0.0	7.4	13.2	31.8	0.0	0.0
16	0.0	0.0	0.0	4.6	0.0	0.0	0.0	6.6	10.0	1.2	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	48.8	1.4	22.0	11.8	1.8	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	114.8	69.0	22.4	5.0	1.4	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	51.2	0.0	5.4	8.8	73.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	76.8	103.4	8.8	91.2	0.2	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	133.6	27.2	2.4	6.8	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	181.4	29.2	25.4	24.4	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	84.2	90.4	0.0	78.2	0.0	0.0	0.0
24	0.0	0.0	0.0	35.4	0.0	11.4	132.2	0.4	3.2	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	4.4	181.0	11.4	14.2	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	3.8	0.0	8.6	8.0	3.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.6	0.0	7.8	7.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	18.2	33.2	0.0	0.0	16.8	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	56.4	35.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	25.6	34.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	1.2	0.0	4.4	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	40.6	5.0	917.0	1212.8	400.0	404.4	212.4	0.0	0.0
Annual rainfall in mm					3192.2							

Year- 2006													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	124.8	3.6	35.6	13.4	5.6	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	98.8	38.0	14.0	7.4	34.4	1.2	0.0
	3	0.0	0.0	0.0	0.0	8.4	35.6	31.8	16.0	0.0	74.0	2.2	0.0
	4	0.0	0.0	0.0	0.0	0.0	38.2	5.2	8.8	0.0	25.2	4.4	0.0
	5	0.0	0.0	0.0	0.0	0.0	4.4	14.4	6.6	0.0	6.4	2.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	7.6	11.4	41.6	0.0	32.6	11.6	0.0
	7	0.0	0.0	0.0	0.0	0.0	0.0	26.2	72.8	0.0	1.2	2.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	5.2	56.4	85.2	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	7.2	6.8	18.4	0.0	133.2	0.0	0.0
	10	0.0	0.0	31.6	0.0	0.0	7.4	10.4	24.4	6.4	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	22.0	18.2	56.0	0.0	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	0.0	31.0	19.0	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	2.6	30.8	32.4	25.6	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	0.0	18.4	12.6	26.4	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	1.0	4.2	41.8	115.8	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	0.0	8.0	12.0	36.2	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	0.0	9.0	40.0	37.8	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	0.0	13.8	60.0	24.8	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	0.0	14.0	40.4	12.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	0.0	25.8	11.4	16.2	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	5.8	31.8	9.4	18.6	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	0.0	14.2	1.2	14.8	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	4.8	3.0	10.2	3.0	9.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	196.6	84.2	0.0	2.6	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	1.4	89.4	5.8	0.0	5.8	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	4.4	121.2	28.6	0.0	23.6	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	3.8	46.2	15.4	0.0	1.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	76.0	42.6	16.0	20.6	0.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	18.4	59.8	13.0	4.2	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	358.4	15.8	5.8	6.4	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	76.2	0.0	14.2	0.0	0.0	0.0	0.0	0.0
	Total	0.0	0.0	31.6	0.0	551.8	935.2	616.6	693.8	397.4	312.6	23.4	0.0
Annual rainfall in mm						3562.4							

Year- 2007													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	1.2	18.2	5.4	86.4	40.6	6.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	2.0	28.0	64.6	94.0	3.8	7.4	0.0
	3	0.0	0.0	0.0	0.0	0.0	13.2	22.2	111.2	113.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	18.2	88.4	57.0	38.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	38.6	126.6	14.4	0.0	6.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	1.4	0.0	95.8	9.0	4.4	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	0.0	17.4	78.2	26.4	9.2	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	0.0	32.6	23.0	20.4	22.2	11.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.0	44.0	23.2	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	23.0	30.0	14.0	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	11.2	50.7	14.6	0.0	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	37.8	2.2	8.0	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	29.0	17.2	11.0	0.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	9.6	22.8	8.4	8.4	0.0	0.0	0.0
	15	0.0	0.0	0.0	5.4	0.0	74.2	1.2	14.6	2.4	0.0	0.0	0.0
	16	0.0	0.0	0.0	1.0	0.0	66.0	18.4	9.0	9.4	0.0	0.0	0.0
	17	0.0	0.0	0.0	2.0	0.0	42.0	38.0	0.0	16.2	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	46.8	1.8	2.0	13.4	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	46.6	7.4	0.0	15.4	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	86.8	2.4	36.6	15.6	57.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	48.0	11.0	58.0	0.0	0.0	0.0	1.4
	22	0.0	0.0	0.0	0.0	0.0	64.0	32.2	14.4	2.4	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	180.8	18.8	52.4	33.4	7.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	131.4	22.2	36.8	64.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	22.6	2.8	6.4	54.2	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	31.4	6.2	60.4	2.6	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	22.2	39.8	33.6	1.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	6.2	25.2	21.2	64.2	4.2	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	53.6	62.4	75.2	21.8	48.6	3.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	69.4	34.6	26.0	8.0	1.8	0.0	0.0
	31	0.0	0.0	0.0	0.0	7.2	0.0	23.4	85.4	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	8.4	67.0	1148.	698.7	1194.	719.8	187.0	30.4	1.4	
Annual rainfall in mm					4054.9								

Year- 2008												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	58.8	23.2	23.4	3.8	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	60.8	1.8	4.8	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	6.6	46.4	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	1.0	5.0	28.6	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	11.2	3.8	1.0	0.0	34.8	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	35.2	9.0	15.4	11.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	52.8	25.6	19.4	28.4	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	72.2	13.0	46.8	56.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	95.0	6.8	100.4	5.4	0.0	0.0	0.0
10	0.0	0.0	0.0	1.8	0.0	49.4	5.0	130.6	136.8	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	30.8	6.4	129.8	56.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	73.4	4.0	152.8	40.4	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	114.6	9.2	115.2	51.8	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	34.4	18.6	71.0	35.2	0.0	0.0	0.0
15	0.0	5.2	0.0	0.0	0.0	35.0	0.0	76.4	11.4	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	53.0	3.2	18.2	26.4	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	43.0	1.0	19.4	6.6	0.0	3.2	0.0
18	0.0	0.0	0.0	0.0	0.0	4.6	6.4	10.2	9.4	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	2.0	4.8	34.4	18.6	0.0	1.2	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	6.0	1.8	21.4	0.0	0.0	0.0
21	0.0	0.0	8.6	0.0	0.0	4.8	6.2	2.6	27.2	0.0	0.0	0.0
22	0.0	0.0	47.2	0.0	0.0	3.0	39.4	0.0	25.0	0.0	0.0	0.0
23	0.0	0.0	14.6	0.0	0.0	3.0	1.0	1.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	8.3	1.2	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	18.0	15.2	0.0	14.4	71.2	0.0	0.0	5.2	0.0	0.0
26	0.0	0.0	2.8	0.0	0.0	27.0	44.2	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	4.0	15.1	70.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	40.2	75.8	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	49.2	42.6	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	9.6	32.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	33.8	0.0	16.2	0.0	0.0	0.0	0.0	0.0
Total	0.0	5.2	91.2	17.0	37.8	941.0	618.2	1046.	575.6	40.0	4.4	0.0
Annual rainfall in mm					3377.0							

Year- 2009												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	56.0	4.8	15.2	28.6	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	14.6	82.4	1.2	34.6	87.2	0.0
3	0.0	0.0	0.0	0.0	0.0	1.0	155.2	29.2	53.8	183.2	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	72.2	2.6	55.2	51.2	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	9.2	98.4	14.6	72.4	8.4	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	115.0	129.4	11.4	47.4	53.8	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	134.2	60.0	3.6	18.2	26.2	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	12.4	98.6	6.4	15.4	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	8.2	99.2	1.0	7.2	0.0	1.0	0.0
10	0.0	0.0	0.0	0.0	0.0	11.8	73.0	2.0	21.2	0.0	8.2	0.0
11	0.0	0.0	0.0	0.0	0.0	3.8	42.6	27.8	12.2	0.0	28.2	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	32.4	1.0	5.8	0.0	9.8	0.0
13	0.0	0.0	20.8	0.0	0.0	19.4	14.8	14.8	0.0	13.4	2.2	0.0
14	0.0	0.0	0.0	0.0	0.0	3.8	39.2	1.2	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	16.0	73.4	3.0	6.2	4.0	8.8	0.0
16	0.0	0.0	0.0	0.0	0.0	6.0	29.6	1.0	0.0	0.0	17.6	0.0
17	0.0	0.0	0.0	0.0	0.0	28.6	41.2	0.0	0.0	0.0	2.4	0.0
18	0.0	0.0	0.0	0.0	3.4	0.0	42.4	8.6	0.0	0.0	1.8	0.0
19	0.0	0.0	0.0	0.0	0.0	15.4	31.8	15.4	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	23.4	30.4	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	17.6	13.0	0.0	7.4	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	15.4	40.6	57.0	24.6	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	10.4	24.4	12.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	55.2	169.6	13.2	54.4	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	5.2	50.4	5.2	41.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	1.4	28.6	2.2	20.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	38.2	11.2	13.6	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	42.4	47.2	28.4	0.0	0.0	0.0	69.8
29	0.0	0.0	0.0	0.0	0.0	48.2	49.4	30.4	3.2	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	9.0	63.4	8.2	74.4	0.0	0.0	1.2
31	0.0	0.0	0.0	0.0	0.0	0.0	14.8	56.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	20.8	0.0	80.6	877.8	1603.2	438.2	449.8	456.0	80.0	71.0
Annual rainfall in mm					4077.4							

Year- 2010													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	1.0	10.8	68.8	55.0	8.4	47.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	100.0	19.4	21.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	6.6	0.0	43.0	12.4	29.2	5.4	16.6	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	25.0	72.2	43.4	74.2	6.6	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	70.6	6.4	44.4	0.0	1.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	1.2	47.2	2.0	24.6	9.4	1.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	4.0	48.0	5.2	37.6	16.0	7.4	0.0
	8	0.0	0.0	0.0	0.0	0.0	12.6	9.2	6.4	24.0	0.0	9.2	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.0	63.0	1.2	41.0	7.2	113.0	1.0
	10	0.0	0.0	0.0	0.0	2.4	0.0	0.0	7.2	7.2	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	2.0	0.0	20.6	26.2	0.0	1.2	8.8
	12	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	84.8	0.0
	13	9.4	0.0	0.0	0.0	0.0	23.2	12.2	2.2	16.6	1.2	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	86.6	41.2	1.0	0.0	5.4	0.0	0.0
	15	24.2	0.0	0.0	0.0	0.0	58.4	6.6	10.0	14.8	9.2	22.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	42.2	172.8	3.4	79.2	8.6	4.2	0.0
	17	0.0	0.0	0.0	0.0	0.0	60.0	31.2	28.6	49.0	29.4	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	68.2	52.0	25.0	7.4	99.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	1.2	34.6	44.6	34.2	3.4	16.2	1.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	37.2	115.8	4.0	2.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	40.0	103.2	0.0	0.0	17.4	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	7.8	59.0	12.2	21.4	48.4	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	32.8	31.2	2.6	0.0	16.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	36.2	23.2	0.0	44.0	2.2	2.6	0.0
	25	0.0	0.0	0.0	0.0	0.0	67.0	31.0	24.8	0.0	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	140.7	64.6	27.4	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	45.4	51.4	26.6	7.4	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	5.0	47.0	15.0	47.4	0.0	0.0	0.0
	29	0.0	0.0	0.0	3.2	0.0	5.6	118.4	2.6	17.4	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	74.0	132.6	17.4	33.8	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	126.6	0.0	141.2	49.6	0.0	0.0	0.0	0.0
Total	33.6	0.0	0.0	3.2	137.8	896.9	1754.0	494.6	650.8	412.2	270.6	9.8	
Annual rainfall in mm					4663.5								

Year- 2011												
Month Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	11.2	44.8	10.0	68.8	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	36.0	31.2	40.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	120.0	73.2	42.2	30.2	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	14.6	58.2	132.0	30.0	0.0	5.4	0.0
5	0.0	0.0	0.0	0.0	0.0	29.0	66.0	37.4	16.4	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	43.0	76.2	1.0	7.8	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	67.0	44.2	34.6	17.6	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	10.0	66.4	41.0	43.2	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	41.0	27.6	3.2	19.0	0.0	0.0	0.0
10	0.0	0.0	0.0	6.4	0.0	46.6	5.4	8.8	3.8	1.4	0.0	0.0
11	0.0	0.0	0.0	12.8	0.0	49.8	27.2	2.0	9.6	11.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	45.4	47.4	3.2	8.2	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	59.2	44.0	9.6	1.4	10.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	25.6	54.4	13.8	7.8	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	57.0	45.2	13.8	17.2	26.0	0.0	0.0
16	0.0	0.0	0.0	8.0	0.0	82.2	178.8	23.2	14.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	42.0	137.2	68.6	46.8	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	7.2	38.4	25.4	21.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	17.0	78.0	13.8	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	5.2	7.2	10.2	15.2	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	24.4	76.2	3.8	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	26.0	22.6	11.8	1.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	90.0	53.0	16.4	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	2.0	5.8	15.2	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	8.0	0.0	3.6	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	27.0	20.0	12.6	0.0	28.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	7.2	36.8	6.2	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	9.2	70.2	15.2	0.0	2.8	1.0	0.0
29	0.0	0.0	0.0	0.0	0.0	1.2	30.2	23.4	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	3.6	27.8	62.2	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	25.2	37.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	27.2	0.0	930.2	1410.8	869.0	436.6	79.2	6.4	0.0
Annual rainfall in mm					3759.4							

Year- 2012												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	26.2	7.6	59.0	56.4	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	32.6	7.0	20.2	13.6	37.2	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	85.2	29.4	12.0	35.0	18.6	0.0
4	0.0	0.0	0.0	0.0	0.0	17.2	18.0	22.6	69.0	12.2	6.2	0.0
5	0.0	0.0	0.0	0.0	0.0	111.2	5.0	5.0	29.2	18.8	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	22.4	17.8	8.0	5.2	82.8	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	4.6	28.8	26.0	9.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	17.8	11.0	40.0	42.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	6.6	6.0	22.6	16.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	16.0	10.0	26.6	16.6	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	2.2	129.2	110.0	9.4	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	76.6	18.2	35.0	10.6	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	19.6	23.2	56.0	16.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	2.0	37.6	21.0	12.2	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	2.2	13.0	12.0	6.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	26.2	49.0	13.8	8.8	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	40.6	17.2	24.0	1.0	0.0	0.0	0.0
18	0.0	0.0	0.0	1.0	0.0	136.4	28.4	49.0	11.2	0.0	0.0	0.0
19	0.0	0.0	0.0	24.0	0.0	114.2	26.0	24.4	4.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	9.0	16.2	5.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	18.0	26.4	26.6	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	9.6	6.2	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	28.4	3.0	10.4	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	4.2	44.8	11.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	62.6	2.6	21.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	59.0	13.6	20.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	64.2	24.4	58.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	73.0	5.0	24.6	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	48.0	6.2	47.4	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	91.2	5.0	20.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	11.2	36.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	25.0	0.0	1083.0	747.0	820.0	357.4	218.8	62.0	0.0
Annual rainfall in mm					3313.2							

Month wise rainfall data of Hattikeri rain gauge station in mm

Year- 2001												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	7.4	0.0	0.0	0.0	0.0	0.2	53.4	24.2	2.8	32.4	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	61.8	19.2	0.0	1.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	13.2	53.6	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	1.8	0.0	0.0	15.0	37.4	0.0	0.4	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.2	84.4	56.6	0.0	0.8	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	44.8	7.2	1.8	0.0	1.8	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	10.2	26.4	10.4	1.4	1.8	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	26.6	36.4	8.6	0.0	17.4	0.0	0.0
9	0.0	0.0	0.0	0.2	0.0	26.2	52.6	13.4	0.0	9.8	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	14.2	18.2	8.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.4	0.0	16.8	30.4	5.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	20.4	0.0	62.6	21.8	9.8	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	31.8	0.0	32.8	14.0	1.8	0.0	12.2	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	41.6	45.6	28.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	45.6	0.0	61.2	18.4	33.4	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.2	0.0	11.8	18.6	9.2	0.0	16.6	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	8.0	20.2	24.2	21.8	2.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	13.6	18.2	40.2	0.0	5.2	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	6.8	18.4	31.4	0.0	0.2	0.0	0.0
20	0.0	0.0	0.0	0.0	14.0	40.8	14.8	0.4	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	2.2	30.2	11.4	46.4	13.2	3.0	0.0	0.0
22	0.0	0.0	0.0	0.0	1.2	150.4	5.0	26.4	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	1.0	23.6	6.0	13.0	14.4	17.2	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	13.2	0.8	39.4	9.8	30.2	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	45.0	41.2	47.4	10.2	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	12.2	7.8	45.2	0.6	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	14.0	27.0	56.0	1.2	11.8	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	4.4	68.8	30.0	4.8	16.2	0.0	0.0	0.0
29	0.0	0.0	0.0	0.4	31.2	87.6	61.4	1.4	0.8	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.8	60.8	39.6	5.2	10.4	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	2.8	0.0	19.2	5.0	0.0	0.0	0.0	0.0
Total	7.4	0.0	0.0	101.8	164.6	899.0	956.6	542.0	125.8	104.6	0.0	0.0
Annual rainfall in mm					2901.8							

Year- 2002												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	3.2	4.6	3.8	12.4	1.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	7.0	14.0	48.2	14.6	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	27.0	6.4	18.0	17.4	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	2.8	4.6	78.4	13.0	18.8	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	4.8	11.8	15.2	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	1.2	0.0	7.2	26.6	33.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.2	9.0	2.2	1.4	15.4	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.2	0.0	1.2	8.2	1.6	7.0	0.0	0.0
9	0.0	0.0	0.0	0.0	5.6	1.2	9.4	113.8	17.8	8.8	0.0	0.0
10	0.0	0.0	0.3	0.0	4.4	1.2	75.6	138.8	0.0	27.4	0.0	0.0
11	0.0	0.0	0.0	0.0	0.6	117.4	107.2	20.8	0.8	2.2	0.0	0.0
12	0.0	0.0	0.0	0.0	0.2	35.0	10.0	45.8	0.0	38.6	0.0	0.0
13	0.0	0.0	0.0	0.0	0.4	2.0	5.8	46.6	0.2	69.8	0.0	0.0
14	0.0	0.0	0.0	26.0	0.0	140.6	19.6	7.0	0.0	1.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	157.2	3.8	38.8	0.0	2.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	150.2	26.6	12.8	0.0	27.4	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	77.4	11.0	27.6	0.0	1.2	0.0	0.0
18	0.0	0.0	0.0	0.0	13.8	69.2	5.2	7.8	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	116.0	130.4	5.4	11.8	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	11.4	28.6	0.0	10.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	7.2	76.6	26.8	7.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	1.2	0.0	49.8	31.4	9.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	50.6	17.6	2.2	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	27.8	5.6	6.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	11.4	4.6	30.4	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	9.2	24.8	15.6	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	22.4	35.8	25.6	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	9.4	15.4	16.8	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	40.6	5.6	11.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	15.6	8.6	3.2	0.0	0.0	33.4	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.3	27.2	249.2	1250.2	493.4	748.2	141.4	238.6	0.0	0.0
Annual rainfall in mm					3148.5							

Year- 2003													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	0.0	51.4	14.0	37.0	3.4	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	59.2	32.2	8.4	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	87.2	10.6	14.0	10.2	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	42.0	13.0	9.0	17.8	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	82.8	140.2	9.0	1.8	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.2	95.8	35.0	45.2	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	1.4	188.4	42.4	20.2	0.2	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	0.2	13.6	19.8	9.0	1.2	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	7.0	34.0	14.4	12.6	0.0	0.2	0.0
	10	0.0	0.0	0.0	0.0	0.0	9.6	50.2	0.8	10.6	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	2.2	27.2	4.2	0.2	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	46.0	13.8	10.4	11.0	2.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	108.8	14.2	21.8	0.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	4.8	104.8	4.6	8.2	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	72.2	77.8	20.6	7.0	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	91.2	74.0	40.0	28.0	5.4	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	55.8	31.0	6.2	36.0	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	28.4	18.2	18.4	0.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	79.2	11.2	70.8	0.2	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	137.4	8.0	30.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	158.2	2.2	53.0	0.0	31.6	0.0	0.0
	22	0.0	0.0	0.0	5.4	0.0	283.6	4.8	6.8	0.0	21.8	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	48.2	61.2	3.2	0.0	5.4	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	9.2	24.4	5.0	0.6	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	46.8	11.8	16.6	15.0	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	16.4	42.2	26.8	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	16.2	19.0	5.4	0.2	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	67.8	23.6	8.4	19.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	0.0	33.6	25.0	14.0	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	41.1	25.2	41.2	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.2	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	5.4	0.0	1365.	1324.2	788.0	300.4	100.8	0.2	0.0	
Annual rainfall in mm						3884.5							

Year- 2004													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	14.2	5.8	40.8	0.2	0.4	0.4	0.0
	2	0.0	0.0	0.0	0.0	0.0	5.2	22.6	28.2	0.0	1.6	18.2	0.0
	3	0.0	0.0	0.0	0.0	11.2	0.2	16.4	81.8	0.0	30.8	54.4	0.0
	4	0.0	0.0	0.0	0.0	1.8	0.0	28.4	53.8	0.0	2.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	2.8	1.6	11.6	21.6	0.0	46.8	0.0	0.0
	6	0.0	0.0	0.0	0.0	5.4	25.4	4.8	35.2	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	9.6	0.0	10.2	15.2	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	1.0	104.6	0.0	40.4	30.2	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.2	120.2	36.2	11.0	15.2	0.0	11.8	0.0
	10	0.0	0.0	0.0	0.0	7.8	133.6	15.4	11.4	22.9	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.2	29.8	15.2	22.2	10.8	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.2	23.6	146.4	44.6	16.2	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.4	29.4	28.0	168.8	22.4	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	8.2	26.0	7.6	53.2	0.0	0.2	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.4	18.2	44.4	10.2	1.8	0.6	0.0	0.0
	16	0.0	0.0	0.0	0.0	12.2	20.8	34.4	14.0	1.8	0.6	0.0	0.0
	17	0.0	0.0	0.0	0.0	75.0	21.6	22.4	22.2	0.0	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	101.6	6.6	7.0	18.6	0.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	3.6	10.6	12.4	7.8	0.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	41.2	0.0	17.6	3.6	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	0.0	31.6	44.8	0.0	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	4.0	0.0	36.4	8.4	33.4	0.2	0.0	0.0
	23	0.0	0.0	0.0	0.0	38.4	2.6	25.2	22.8	0.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	15.2	2.8	39.4	15.0	0.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	16.8	5.6	6.8	21.4	0.6	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	18.0	114.2	42.8	8.4	1.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	14.8	35.2	23.8	11.0	31.8	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	5.6	22.8	40.6	12.8	0.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	0.0	6.8	21.2	0.2	14.2	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	13.8	61.2	0.4	0.2	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	57.6	0.8	0.0	0.0	0.0	0.0
	Total	0.0	0.0	0.0	0.0	386.0	805.0	863.2	845.6	217.9	83.2	84.8	0.0
Annual rainfall in mm						3285.7							

Year- 2005												
Month Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	38.2	18.8	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.2	23.6	44.4	1.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	16.0	13.0	14.4	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	23.6	31.6	12.8	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	155.6	12.8	5.2	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	17.8	16.6	14.0	0.0	0.0	0.0
7	0.0	0.0	0.0	2.0	0.0	8.2	6.0	17.8	2.0	0.0	0.0	0.0
8	0.0	0.0	0.0	1.8	0.0	12.8	12.2	30.6	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	10.2	3.0	88.4	6.2	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	52.2	6.0	28.5	18.2	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	65.6	69.0	17.4	9.2	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	5.0	59.4	1.0	26.6	28.4	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	2.2	76.7	8.2	25.6	8.6	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	21.2	31.4	23.6	20.0	35.6	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	20.2	0.6	4.2	10.2	3.8	0.0	0.0
16	0.0	0.0	0.0	16.2	0.0	2.0	0.0	11.4	19.6	0.6	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	35.6	1.0	41.2	6.2	0.2	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	108.6	45.4	47.2	0.8	6.2	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	35.6	0.0	10.2	10.6	71.8	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	74.6	42.2	9.0	53.2	0.6	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	148.6	28.4	20.4	13.2	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	172.2	21.0	7.2	36.2	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	102.8	66.2	1.6	65.2	0.0	0.0	0.0
24	0.0	0.0	0.0	1.6	0.0	51.6	131.8	2.6	10.2	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	15.6	155.8	7.4	10.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	3.0	3.0	34.2	15.8	0.2	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	11.0	13.4	1.2	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	11.0	55.0	0.2	0.0	0.2	0.0	0.0
29	0.0	0.0	0.0	0.0	0.2	47.8	43.2	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	23.0	27.8	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	7.4	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	21.6	10.6	1040.8	1205.5	532.3	390.8	156.0	0.0	0.0
Annual rainfall in mm					3357.6							

Year- 2006													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	127.2	7.8	32.2	10.0	20.2	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	106.4	38.8	25.8	0.2	15.4	3.2	0.0
	3	0.0	0.0	0.0	0.0	1.2	19.0	40.8	26.4	0.0	86.4	0.4	0.0
	4	0.0	0.0	0.0	0.0	0.0	50.0	21.0	20.6	0.0	22.2	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	20.8	28.2	16.6	0.0	7.4	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	31.4	11.8	51.6	0.0	22.8	0.6	0.0
	7	0.0	0.0	0.0	0.0	0.0	2.2	24.0	58.2	0.0	0.8	0.8	0.0
	8	0.0	0.0	0.0	0.0	0.0	4.8	138.2	110.2	0.0	1.6	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.6	10.6	42.2	0.2	111.6	0.0	0.0
	10	0.0	0.0	13.2	0.0	0.0	2.0	36.8	36.4	7.6	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	33.2	11.2	42.4	0.0	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	10.2	17.4	20.6	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	1.8	23.6	26.4	20.2	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	0.0	36.6	15.0	37.0	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	0.0	15.8	36.0	36.6	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	0.0	8.2	43.4	92.6	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	0.2	8.8	52.2	54.2	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	0.0	27.0	87.0	22.4	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	0.0	17.0	57.2	41.2	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	1.8	36.6	23.6	13.0	0.0	0.0	0.0
	21	0.0	0.0	0.2	0.0	0.0	12.8	22.8	7.8	1.2	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	0.0	18.0	12.4	10.2	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	1.6	2.6	14.8	1.4	45.2	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	8.2	143.4	85.8	0.0	9.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.8	72.8	5.4	0.0	7.2	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	21.0	148.2	12.2	0.0	64.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	5.8	59.2	41.0	0.0	0.8	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	36.8	20.0	57.4	31.8	0.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	41.2	68.0	21.2	1.8	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	300.4	20.6	27.6	1.2	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	118.8	0.0	33.4	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	13.4	0.0	535.8	959.2	899.8	880.4	472.8	288.4	5.0	0.0	
Annual rainfall in mm					4054.8								

Year- 2007													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
12 Months	1	0.0	0.0	0.0	0.0	0.0	1.4	24.2	10.4	93.6	35.4	13.8	0.0
	2	0.0	0.0	0.0	0.0	0.0	7.8	34.0	104.2	83.2	0.2	0.2	0.0
	3	0.0	0.0	0.0	0.0	0.0	23.6	24.2	112.8	73.6	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.6	64.0	62.2	68.0	56.2	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	38.2	172.2	10.6	6.2	0.8	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.0	7.8	131.6	3.6	7.8	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	0.0	11.8	113.6	34.8	0.0	4.8	0.0
	8	0.0	0.0	0.0	0.0	0.0	0.2	37.4	30.8	21.4	0.0	20.6	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.0	42.0	38.2	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.4	0.0	41.8	51.2	17.4	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	25.2	50.4	46.2	0.0	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	135.4	5.2	2.8	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	57.4	13.8	23.6	0.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	15.0	37.6	0.6	7.0	0.0	0.0	0.0
	15	0.0	0.0	0.0	4.6	0.0	73.2	16.4	34.0	2.4	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	56.0	10.4	4.0	4.0	0.0	0.0	0.0
	17	0.0	0.0	0.0	3.8	0.0	31.6	42.8	0.0	31.8	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.2	69.8	12.2	0.6	11.4	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	31.0	8.2	13.4	3.4	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	70.4	1.4	67.2	13.8	31.2	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	28.6	3.6	22.0	0.0	3.8	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	84.6	21.6	12.8	3.8	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	1.6	162.6	56.4	50.0	23.2	3.8	0.0	1.2
	24	0.0	0.0	0.0	0.0	0.0	157.2	7.6	6.8	44.2	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	20.8	1.6	7.4	28.6	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.6	33.6	5.2	16.2	3.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	29.2	27.6	30.0	0.4	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	4.6	21.4	40.2	50.0	7.4	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	100.8	89.0	75.6	10.2	75.6	0.2	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	92.2	34.4	18.2	17.4	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	1.0	0.0	18.0	68.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	8.8	108.8	1359.6	825.0	1277.4	666.2	144.8	40.2	1.2	
Annual rainfall in mm					4432.0								

Year- 2008												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	94.6	25.0	35.2	0.0	0.0	0.0	0.8
2	0.0	0.0	0.0	0.0	0.0	0.0	50.2	6.6	0.4	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	2.6	27.8	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	1.8	0.8	22.8	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	10.6	7.0	2.0	0.0	68.6	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	30.6	26.2	14.0	12.4	12.2	0.0	0.0
7	0.0	0.0	0.0	3.8	0.0	64.6	15.2	41.2	0.6	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	96.8	10.4	53.8	105.4	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	132.2	7.2	93.8	43.4	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	47.8	11.6	134.6	62.8	8.4	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	64.2	4.8	126.8	51.4	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	124.2	0.0	101.4	24.8	0.0	0.8	0.0
13	0.0	0.0	0.0	0.0	0.0	110.2	28.4	98.6	95.8	0.0	0.0	0.0
14	0.0	0.0	1.6	0.0	0.0	12.8	3.8	56.6	33.4	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	41.4	0.0	43.8	6.2	0.0	0.0	0.0
16	0.0	0.0	0.6	0.0	0.0	42.8	0.2	18.0	23.4	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	12.6	0.4	10.2	13.4	0.0	0.2	0.0
18	0.0	0.0	0.0	0.0	0.0	3.6	8.2	8.4	16.8	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	10.0	1.4	7.0	21.4	1.0	0.2	0.0
20	0.0	0.0	0.0	0.0	0.0	17.8	18.2	0.8	2.2	0.0	0.0	0.0
21	0.0	0.0	15.4	0.0	0.2	0.8	0.0	0.8	16.0	0.0	0.0	0.0
22	0.0	0.0	55.4	1.6	0.0	6.6	2.8	0.2	6.2	14.6	0.0	0.0
23	0.0	0.0	15.6	0.0	0.0	3.6	10.6	0.2	0.0	10.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	10.2	2.6	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	23.2	10.8	0.0	5.4	75.6	0.0	0.0	28.4	0.0	0.0
26	0.0	0.0	5.2	0.0	0.8	36.2	55.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	1.0	0.0	6.0	17.2	70.4	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	43.2	82.4	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	2.6	51.0	41.8	0.0	0.0	0.0	0.2	0.0
30	0.0	0.0	0.0	0.0	2.4	35.0	34.8	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	1.8	0.0	15.6	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	118.	16.2	13.8	1127.8	613.2	904.6	536.0	143.2	1.4	0.8
Annual rainfall in mm					3475.0							

Year- 2009												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.2	86.2	9.4	17.2	22.8	0.0	0.0
2	0.0	0.0	0.0	0.0	0.2	21.8	68.2	18.8	31.8	152.6	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	5.2	152.2	12.4	30.4	224.6	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	101.6	11.8	44.8	24.4	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	7.0	101.4	18.2	106.2	8.8	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	203.6	86.2	48.8	42.6	20.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	154.6	100.2	17.0	28.8	25.6	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	10.4	96.4	5.8	14.4	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	3.4	128.2	4.8	2.6	0.4	2.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	90.2	4.0	24.2	0.0	6.8	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	53.6	14.4	6.4	0.0	41.6	0.0
12	0.0	0.0	0.0	0.0	0.0	8.8	23.4	10.8	13.6	0.0	3.2	0.0
13	0.0	0.0	23.6	0.0	0.0	28.4	20.8	4.8	0.0	15.4	0.2	0.0
14	0.0	0.0	0.0	0.0	0.0	13.6	48.4	0.8	0.0	4.2	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	2.4	47.2	0.2	8.2	10.4	3.6	0.0
16	0.0	0.0	0.0	0.0	0.0	31.8	56.6	2.2	0.0	0.0	36.2	0.0
17	0.0	0.0	0.0	0.0	0.0	6.8	33.8	0.4	0.0	0.0	28.0	0.0
18	0.0	0.0	0.0	0.0	4.0	0.0	71.0	13.4	0.0	0.0	1.0	0.0
19	0.0	0.0	0.0	0.0	0.0	8.0	16.2	9.4	3.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	12.6	57.6	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	18.4	24.4	0.0	9.2	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	10.4	25.6	22.4	58.8	0.6	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	12.4	26.8	42.4	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	8.2	48.6	8.0	73.4	1.4	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	4.2	45.2	6.2	36.4	1.8	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	41.6	5.0	16.2	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	31.8	9.2	9.0	0.8	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	52.4	35.8	23.4	0.0	0.0	0.0	11.0
29	0.0	0.0	0.0	0.0	0.0	37.4	50.4	71.4	7.4	0.0	0.0	0.6
30	0.0	0.0	0.0	0.0	0.0	31.8	96.2	12.8	62.8	0.0	0.0	2.4
31	0.0	0.0	0.6	0.0	0.0	0.0	7.4	45.8	0.0	0.0	0.0	0.0
Total	0.0	0.0	24.2	0.0	27.0	863.8	1731.2	597.0	458.2	509.2	122.6	14.0
Annual rainfall in mm					4347.2							

Year- 2010													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	2.2	4.8	42.8	35.8	29.2	7.6	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	87.8	27.2	17.2	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	2.6	0.0	58.8	6.0	30.8	0.4	23.8	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	20.8	73.2	47.4	27.2	4.4	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	61.2	18.4	7.4	0.0	1.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.8	33.8	14.0	83.8	0.2	5.2	0.0
	7	0.0	0.0	0.0	0.0	0.0	10.2	31.8	8.6	21.8	12.8	12.8	0.0
	8	0.0	0.0	0.0	0.0	0.0	2.0	15.6	30.8	21.8	15.6	17.4	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.6	22.0	5.8	43.4	0.0	113.2	0.0
	10	0.0	0.0	0.0	0.0	2.6	0.0	0.0	1.8	13.0	0.0	0.0	0.0
	11	0.8	0.0	0.0	0.0	0.0	0.0	0.0	36.2	31.4	0.0	6.4	7.0
	12	0.0	0.0	0.0	0.0	0.0	0.8	0.8	2.8	1.8	0.0	52.2	0.0
	13	0.4	0.0	0.0	0.0	0.0	18.6	8.2	5.0	2.2	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	53.6	23.2	2.6	8.2	0.2	0.4	0.0
	15	12.4	0.0	0.0	0.2	0.0	62.6	2.6	4.8	12.4	15.0	12.4	0.0
	16	0.0	0.0	0.0	0.0	0.0	88.8	93.0	4.4	71.4	0.4	3.2	0.0
	17	0.0	0.0	0.0	0.0	0.0	96.8	22.6	51.0	47.8	5.4	0.0	0.0
	18	0.0	0.0	1.2	0.0	0.0	83.4	61.8	45.6	7.8	43.6	0.0	0.0
	19	0.0	0.0	0.0	0.0	8.6	82.2	63.2	28.4	13.0	23.6	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	62.6	138.2	1.8	0.0	11.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	10.8	73.8	0.2	0.0	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	5.8	90.4	7.2	23.4	2.6	0.0	0.0
	23	0.0	0.0	0.0	2.6	0.0	26.2	48.4	2.4	0.0	48.2	1.8	0.0
	24	0.0	0.0	0.0	0.0	0.0	53.8	9.0	12.2	0.0	7.8	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	51.8	33.4	25.6	50.0	0.0	4.8	0.0
	26	0.0	0.0	0.0	0.0	0.0	121.8	52.6	48.4	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	55.2	25.2	32.2	8.6	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	5.8	55.2	17.6	9.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.2	0.0	8.8	66.6	9.2	65.8	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	59.4	77.4	9.2	5.6	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	38.2	0.0	124.4	52.6	30.4	2.6	0.0	0.0
Total	13.6	0.0	1.2	3.0	54.2	967.2	1444.6	621.0	704.6	224.2	259.0	7.0	
Annual rainfall in mm						4299.6							

Year- 2011												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	19.7	18.6	71.4	0.0	0.6	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	81.0	34.8	61.2	0.0	1.6	0.0
3	0.0	0.0	0.0	0.0	0.0	104.6	67.4	62.2	42.4	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	21.4	100.2	141.2	22.4	0.0	10.8	0.0
5	0.0	0.0	0.0	0.0	0.0	72.8	17.6	31.8	15.6	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	36.8	26.2	2.4	12.8	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	52.2	19.2	30.8	10.2	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	14.2	51.8	27.6	43.2	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	50.8	4.4	4.0	22.8	0.0	0.0	0.0
10	0.0	0.0	0.0	0.2	0.0	76.2	13.8	3.6	2.2	0.0	0.0	0.0
11	0.0	0.0	0.0	5.6	0.0	38.0	58.8	5.4	3.4	16.4	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	93.2	35.8	4.6	16.8	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	48.8	59.2	5.0	26.6	3.6	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	28.6	39.6	37.6	46.6	0.4	0.0	0.0
15	0.0	0.0	0.0	4.6	0.0	87.6	36.4	2.4	18.4	17.8	0.0	0.0
16	0.0	0.0	0.0	2.8	0.0	62.6	145.4	19.4	22.4	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	51.8	115.2	88.4	14.2	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	19.4	46.4	22.8	20.4	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	1.4	14.4	70.4	42.6	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	3.6	4.8	10.6	36.8	0.2	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	10.2	19.2	61.2	4.6	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	15.6	27.6	4.4	8.2	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	57.4	31.0	10.4	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	3.4	10.8	5.6	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.8	0.0	12.6	3.6	7.2	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	45.2	11.8	8.8	0.0	28.8	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	10.0	59.8	21.2	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	8.8	11.8	19.8	0.0	4.8	0.0	0.0
29	0.0	0.0	0.2	0.0	0.0	11.2	22.6	36.6	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.2	23.4	37.4	66.6	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	28.8	46.6	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.2	14.0	0.2	1061.8	1221.7	912.0	565.2	72.0	13.0	0.0
Annual rainfall in mm					3860.1							

Year- 2012												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	52.0	16.6	40.4	41.8	0.4	0.0
2	0.0	0.0	0.0	0.2	0.0	0.0	81.0	11.8	18.8	1.8	21.8	0.0
3	0.0	0.0	0.0	0.0	0.0	0.2	81.2	54.6	25.0	41.6	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	23.0	13.4	37.2	60.2	22.6	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	61.0	10.6	15.6	23.2	32.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	46.4	14.2	51.0	1.4	13.8	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	28.8	40.4	42.0	20.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	9.4	6.4	57.4	41.8	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	10.2	16.0	19.4	20.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	35.4	7.2	34.4	17.6	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	12.0	128.6	127.0	3.0	0.0	0.0	0.0
12	0.0	0.0	0.0	4.6	0.0	61.6	7.2	53.8	20.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.2	0.0	10.6	19.6	31.6	4.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	5.8	44.4	8.8	52.8	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.6	5.8	6.6	15.2	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	27.8	64.4	10.0	12.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	57.0	15.6	11.8	1.8	0.0	0.0	0.0
18	0.0	0.0	0.0	6.8	0.0	168.2	29.0	43.2	7.0	0.0	0.0	0.0
19	0.0	0.0	0.0	23.0	0.0	133.0	20.0	4.8	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	34.2	45.4	10.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.6	50.8	12.6	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	8.2	15.4	1.6	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	30.6	15.4	2.6	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	13.4	38.8	0.2	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	31.8	6.2	0.6	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	40.0	13.0	32.2	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.2	0.0	40.2	38.6	27.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.2	0.0	46.0	17.4	34.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	13.0	7.4	54.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.2	83.6	4.4	44.8	0.8	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	11.2	34.6	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	35.2	0.2	1032.6	921.0	891.8	385.0	153.6	22.2	0.0
Annual rainfall in mm					3441.6							

Month wise rainfall data of Balale rain gauge station in mm

Year- 2001												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	5.0	106.0	56.0	2.7	25.8	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	55.0	20.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	34.0	27.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	2.4	0.0	0.0	13.0	42.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	85.0	75.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	99.0	13.0	1.0	0.0	6.5	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	73.0	11.0	6.0	2.0	12.1	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	38.0	30.0	15.0	0.0	16.2	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	45.0	26.0	13.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	20.0	35.0	3.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	15.2	0.0	24.0	34.0	1.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	2.0	0.0	32.0	21.0	8.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	42.4	0.0	36.0	5.0	6.0	0.0	11.7	0.0	0.0
14	0.0	0.0	0.0	4.4	0.0	40.0	30.0	8.0	0.0	4.4	0.0	0.0
15	0.0	0.0	0.0	26.0	0.0	48.0	36.0	10.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	11.0	48.0	24.0	0.0	11.1	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	5.0	2.0	0.0	24.2	1.8	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	6.0	40.0	0.0	0.0	5.2	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	2.0	20.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	11.0	6.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.6	18.0	1.0	0.0	4.4	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	2.0	96.0	2.2	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	1.2	24.0	1.0	16.2	0.0	24.7	0.0	0.0	0.0
24	0.0	0.0	0.0	1.0	58.0	0.0	28.0	0.0	22.7	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	39.0	49.0	45.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	7.0	10.0	47.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	12.0	9.0	43.0	0.0	8.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	20.0	91.0	72.0	0.0	12.6	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	19.0	102.0	76.0	0.0	8.6	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	9.0	68.0	80.0	0.0	10.2	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	14.0	0.0	27.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	94.6	204.6	939.0	1087.4	315.0	120.1	94.8	0.0	0.0
Annual rainfall in mm					2855.53							

Year- 2002												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	10.4	12.2	30.8	8.4	1.2	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	14.2	10.4	0.0	15.8	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	17.4	2.8	10.2	20.6	5.4	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	3.4	0.0	20.8	24.2	2.3	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.2	18.4	30.8	10.6	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.2	0.4	19.6	75.4	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	12.6	0.0	17.2	40.4	8.4	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.4	0.0	95.8	24.8	10.6	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.2	10.4	125.2	70.2	4.2	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	1.4	40.8	105.4	50.6	25.4	0.0	0.0
11	0.0	0.0	0.0	4.5	0.0	60.8	70.2	90.6	75.8	48.6	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	80.4	10.4	75.8	15.4	70.4	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	6.8	0.0	30.4	0.0	120.8	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	155.4	5.2	14.2	0.0	108.4	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	130.2	8.4	19.8	0.0	40.2	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	148.6	12.6	30.6	0.0	170.6	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	70.8	4.2	15.4	0.0	45.4	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	80.4	0.0	60.8	0.0	15.2	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	155.2	8.2	75.2	0.0	10.8	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	90.4	14.6	14.6	0.0	4.2	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	90.2	30.8	7.4	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	60.8	60.4	25.8	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	40.4	90.8	75.4	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	6.8	20.2	108.2	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	15.2	45.8	145.6	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	7.8	15.6	30.2	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.2	4.6	60.8	14.8	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	9.4	5.2	70.2	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.1	0.0	1.4	3.2	15.4	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	1.4	4.4	4.2	0.0	0.4	60.4	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	45.8	0.0	0.0
Total	0.0	0.0	0.1	4.5	12.4	1277.8	625.6	1278.2	452.8	808.9	0.0	0.0
Annual rainfall in mm					4460.3							

Year- 2003													
Month	Jan	Feb	Mar	Apl	Ma	Jun	Jul	Aug	Sep	Oct	No	Dec	
	1	0.0	0.0	0.0	0.0	0.0	0.0	175.0	4.8	15.4	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	140.8	30.4	90.8	35.4	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	85.2	15.4	20.0	15.2	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	60.6	20.0	6.4	20.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	175.0	8.6	0.0	8.4	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.0	240.4	30.8	45.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	10.2	265.2	75.2	0.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	8.4	95.0	40.4	10.8	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	13.8	30.4	85.6	35.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	20.2	45.2	60.8	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	10.4	13.4	14.4	6.4	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	50.6	10.2	6.2	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	30.8	7.4	10.4	0.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	25.2	45.6	0.0	4.2	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	40.8	75.8	30.2	0.0	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	80.4	215.2	75.8	25.8	4.2	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	60.2	15.4	90.0	50.2	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	45.6	7.0	105.2	0.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	120.8	9.8	50.8	0.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	170.4	4.6	120.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	95.0	10.4	190.8	0.0	25.4	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	210.4	15.8	15.4	0.0	30.2	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	6.8	30.2	5.0	0.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	4.2	95.8	10.6	0.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	25.4	13.8	6.0	0.0	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	40.8	25.4	2.4	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	15.6	17.8	0.0	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	35.2	30.0	10.4	6.4	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	0.0	21.4	45.6	45.8	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	45.8	17.4	160.0	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	6.2	40.6	0.0	0.0	0.0	0.0
	Total	0.0	0.0	0.0	0.0	0.0	1188.4	2025.6	1362.0	316.4	138.8	0.0	0.0
Annual rainfall in mm						5031.2							

Year- 2004													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	20.4	4.8	69.0	6.2	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	10.1	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	35.2	38.4	57.0	0.0	6.8	4.3	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.2	0.0	25.2	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	4.9	23.9	26.4	0.0	78.4	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	12.0	8.6	15.3	0.0	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	25.4	0.0	16.1	4.0	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	9.4	40.8	0.0	32.2	12.4	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	15.2	95.6	0.6	9.0	15.3	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	10.0	110.4	0.0	2.2	11.4	0.0	2.8	0.0
	11	0.0	0.0	0.0	0.0	0.0	50.4	15.8	1.4	9.3	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	4.6	15.0	70.2	27.3	14.5	0.0	6.0	0.0
	13	0.0	0.0	0.0	0.0	7.0	8.6	28.4	91.4	21.3	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	6.9	26.3	13.1	3.9	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	10.4	15.8	18.0	13.3	0.0	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	45.0	18.0	18.3	15.4	0.0	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	45.8	27.9	28.0	20.0	0.0	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	70.8	10.4	7.2	29.2	0.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	45.4	6.0	4.8	6.8	0.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	30.8	0.2	26.0	16.2	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	0.0	15.2	15.0	0.0	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	15.2	0.0	42.2	11.2	31.3	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	8.8	0.0	33.4	6.4	2.0	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	5.2	0.0	55.0	5.3	0.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	6.4	16.4	2.1	0.0	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	80.6	25.0	40.2	0.0	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	100.4	33.9	28.0	0.0	21.8	8.8	0.0	0.0
	28	0.0	0.0	0.0	0.0	8.0	10.2	7.4	0.0	17.6	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	2.4	5.4	23.8	0.0	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	6.8	14.8	18.0	0.0	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	33.2	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	521.8	599.6	632.7	568.6	171.0	119.2	13.1	0.0	
Annual rainfall in mm					2626.0								

Year- 2005												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	2.0	85.9	19.5	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	6.5	28.7	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	1.1	14.3	17.3	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	18.9	4.9	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	84.9	5.4	18.5	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	53.7	11.0	5.7	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	7.2	27.5	5.8	0.0	0.0	0.0
8	0.0	0.0	0.0	9.3	0.0	0.0	0.0	34.1	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	13.1	42.3	8.3	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	2.8	35.6	10.0	15.7	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	21.3	58.0	6.7	26.4	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	6.7	83.7	8.8	33.9	21.3	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	53.7	4.9	29.1	17.6	0.0	0.0
14	0.0	0.0	0.0	0.0	1.0	5.1	14.3	11.2	44.5	55.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	35.6	15.6	50.3	25.8	0.0	0.0
16	0.0	0.0	0.0	12.2	0.0	0.0	6.2	24.5	19.4	9.7	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	49.3	15.4	20.3	14.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	34.1	0.0	48.7	0.0	3.6	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	55.7	62.8	33.9	10.5	12.1	0.0	0.0
20	0.0	0.0	0.0	3.1	0.0	67.4	52.9	17.0	64.8	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	72.6	75.5	8.5	15.6	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	4.3	143.3	69.1	36.8	36.4	0.0	0.0	0.0
23	0.0	0.0	0.0	8.2	0.0	109.8	110.2	0.0	75.8	0.0	0.0	0.0
24	0.0	0.0	0.0	10.4	0.0	35.2	123.6	2.3	4.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	18.5	114.7	18.6	13.6	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	51.4	0.0	19.2	0.0	7.2	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	31.5	0.0	4.8	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	22.0	11.6	0.0	0.0	3.8	0.0	0.0
29	0.0	0.0	0.0	0.0	8.8	11.7	17.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	33.2	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	43.2	97.0	658.6	1287.6	458.5	499.5	148.9	0.0	0.0
Annual rainfall in mm					3193.3							

Year- 2006													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	110.2	13.8	43.8	13.7	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	125.0	38.4	47.4	16.5	29.4	2.5	0.0
	3	0.0	0.0	0.0	0.0	0.0	60.8	43.0	51.6	0.0	78.5	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	25.4	14.8	32.0	0.0	93.7	3.7	0.0
	5	0.0	0.0	0.0	0.0	0.0	9.2	10.0	27.8	0.0	45.1	5.1	0.0
	6	0.0	0.0	0.0	0.0	0.0	11.8	6.6	18.3	0.0	32.0	9.4	0.0
	7	0.0	0.0	0.0	0.0	0.0	8.8	37.4	56.2	0.0	27.4	27.2	0.0
	8	0.0	0.0	0.0	0.0	0.0	14.6	55.6	84.5	0.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.0	7.8	22.3	0.0	44.6	0.0	0.0
	10	0.0	0.0	27.6	0.0	0.0	17.4	4.0	20.6	14.2	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	27.6	6.2	59.3	0.0	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	0.0	12.8	37.5	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	0.0	17.0	28.2	11.5	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	0.0	178.4	16.4	24.9	4.8	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	0.0	45.6	23.6	57.6	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	8.6	18.2	28.2	35.3	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	16.2	28.0	15.8	28.7	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	0.0	34.8	74.6	19.2	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	0.0	26.0	57.3	16.8	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	0.0	78.4	39.7	13.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	8.6	45.2	18.1	9.7	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	4.0	17.0	11.3	34.2	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	35.4	52.5	15.7	7.6	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	90.2	39.0	0.0	4.4	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	15.8	115.1	14.8	0.0	0.0	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	40.2	210.4	11.3	0.0	12.1	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	6.8	45.6	5.4	0.0	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	65.2	68.8	16.7	6.3	0.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	17.4	105.0	24.1	0.0	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	160.8	35.4	29.3	11.1	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	45.0	0.0	35.4	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	27.6	0.0	351.2	1154.1	967.5	847.6	319.4	355.5	47.9	0.0	
Annual rainfall in mm					4070.8								

Year- 2007													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	0.0	22.1	12.8	64.4	39.6	41.8	0.0
	2	0.0	0.0	0.0	0.0	0.0	9.6	39.5	20.2	45.6	23.4	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	23.8	22.8	20.2	5.4	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	19.4	120.2	23.4	11.3	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	15.1	121.3	10.2	0.0	8.2	0.0
	6	0.0	0.0	0.0	0.0	0.0	0.0	1.6	160.0	2.6	0.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	29.0	4.0	133.5	15.6	4.3	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	0.0	2.8	36.7	0.0	0.0	35.9	0.0
	9	0.0	0.0	0.0	0.0	0.0	3.1	5.3	18.4	0.0	0.0	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	5.6	2.4	13.9	0.0	0.0	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	47.2	12.4	17.6	0.0	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	3.0	1.4	9.2	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	31.3	1.2	6.2	4.5	0.0	0.0	0.0
	14	0.0	0.0	0.0	11.8	0.0	23.6	1.8	2.2	2.3	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	22.2	1.0	12.6	9.6	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	89.1	1.4	6.2	12.4	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	24.0	1.0	0.0	8.1	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	5.8	0.0	0.0	18.5	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	78.1	1.4	6.0	14.2	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	91.9	0.0	25.8	25.8	4.6	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	78.7	1.0	65.2	18.6	0.0	0.0	3.5
	22	0.0	0.0	0.0	0.0	0.0	74.0	2.1	0.0	12.4	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	136.7	4.3	33.3	15.8	22.3	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	145.3	1.0	25.1	17.4	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	35.8	1.2	20.6	18.4	5.7	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	24.9	1.4	37.5	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	24.5	3.5	12.0	5.8	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	30.5	10.4	49.5	8.2	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	3.7	52.6	8.2	13.6	10.4	2.3	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	64.8	12.4	18.6	25.8	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	2.0	0.0	8.4	10.2	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	11.8	5.7	1131.3	211.5	1031.2	410.	118.9	85.9	3.5	
Annual rainfall in mm					3010.0								

Year- 2008												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	20.0	7.3	3.9	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	8.9	47.3	9.1	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	12.3	2.5	28.4	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	4.5	6.3	17.9	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	7.2	5.9	8.4	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	18.6	4.7	6.3	6.8	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	43.0	2.5	15.2	7.2	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	125.1	7.1	27.8	18.6	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	59.8	39.8	114.3	35.4	0.0	0.0	0.0
10	0.0	0.0	0.0	5.8	0.0	34.2	6.2	102.9	57.6	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	23.9	23.0	90.8	102.3	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	75.6	14.5	204.3	60.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	99.7	7.6	88.1	44.7	0.0	0.0	0.0
14	0.0	0.0	7.9	0.0	0.0	28.6	18.6	68.7	18.3	0.0	0.0	0.0
15	0.0	22.	0.0	0.0	0.0	37.5	25.4	77.6	12.5	0.0	0.0	0.0
16	0.0	0.0	9.6	0.0	0.0	54.1	38.6	20.9	8.9	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	8.0	6.1	7.9	31.2	3.6	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	4.3	10.6	18.5	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	3.9	14.3	0.0	8.5	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.0	37.6	0.0	0.0	0.0
21	0.0	0.0	18.8	0.0	0.0	5.2	6.2	0.0	42.0	0.0	0.0	0.0
22	0.0	0.0	25.7	0.0	0.0	9.0	39.4	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	47.3	0.0	0.0	6.3	11.2	0.0	8.7	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	7.4	5.7	0.0	0.0	4.8	0.0	0.0
25	0.0	0.0	30.2	0.0	0.0	3.8	63.8	0.0	0.0	2.5	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	44.9	34.3	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	11.2	30.5	82.4	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	72.6	86.3	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	40.0	45.7	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	30.3	16.5	53.2	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	21.9	0.0	14.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	22.	139.	5.8	71.4	883.5	750.2	937.7	476.6	7.3	0.0	0.0
Annual rainfall in mm					3294.6							

Year- 2009												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	10.8	54.8	15.4	15.3	35.3	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	2.4	75.1	7.3	22.8	82.4	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	7.5	184.7	9.2	18.6	159.2	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	10.4	156.2	0.0	52.3	64.9	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	12.8	99.4	17.3	60.4	11.2	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	12.4	116.8	7.1	21.3	18.2	0.0	0.0
7	0.0	0.0	0.0	3.1	0.0	18.2	120.3	10.4	12.2	11.2	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	24.8	126.6	5.2	23.4	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	16.9	147.6	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	5.3	65.3	0.0	29.8	0.0	10.2	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	22.7	11.5	13.2	0.0	8.1	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	35.5	3.1	0.0	0.0	12.0	0.0
13	0.0	0.0	0.0	0.0	0.0	2.4	4.9	6.4	0.0	8.4	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	2.8	30.2	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	2.8	35.7	0.0	0.0	0.0	25.3	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	188.4	0.0	0.0	0.0	20.6	0.0
17	0.0	0.0	0.0	0.0	0.0	3.7	39.6	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	3.2	37.7	7.2	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	6.2	29.6	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	8.2	20.1	0.0	3.2	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	23.5	5.2	9.4	0.0	5.3	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	14.9	23.4	7.5	6.9	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	11.2	18.4	11.5	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	17.5	148.6	11.2	19.6	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	11.2	40.6	4.8	22.4	0.0	0.0	0.0	0.0
26	0.0	0.0	10.0	0.0	0.0	60.8	0.0	25.4	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	79.3	9.2	8.2	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	48.5	15.2	38.3	0.0	0.0	0.0	4.2
29	0.0	0.0	0.0	0.0	0.0	38.0	20.2	28.2	6.2	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	20.8	40.0	0.0	62.6	0.0	0.0	2.1
31	0.0	0.0	0.0	0.0	0.0	0.0	10.3	39.3	0.0	0.0	0.0	0.0
Total	0.0	0.0	10.0	3.1	67.1	627.2	1737.4	299.9	346.6	390.8	76.2	6.3
Annual rainfall in mm					3564.6							

Year- 2010													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	25.7	8.1	35.1	25.8	24.3	40.1	12.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	145.9	18.9	6.6	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	32.2	13.4	43.8	7.4	8.5	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	27.8	20.7	17.5	78.9	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	49.3	9.5	25.3	0.0	2.3	0.0
	6	0.0	0.0	0.0	0.0	0.0	11.4	50.1	6.8	56.8	0.0	19.8	0.0
	7	0.0	0.0	0.0	0.0	0.0	27.9	70.6	5.3	27.6	8.8	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	6.8	34.5	24.1	50.1	7.9	18.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.0	39.8	8.9	55.2	0.0	77.4	0.0
	10	8.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	28.4	0.0	0.0	0.0
	11	5.7	0.0	0.0	0.0	0.0	0.0	0.0	3.7	10.7	0.0	3.9	2.7
	12	25.8	0.0	0.0	0.0	0.0	4.2	0.0	9.8	0.0	0.0	34.2	0.0
	13	0.0	0.0	0.0	0.0	0.0	71.6	1.3	2.9	19.0	0.0	0.0	0.0
	14	17.5	0.0	0.0	0.0	0.0	72.7	9.7	4.0	1.5	0.0	0.0	0.0
	15	19.3	0.0	0.0	22.4	0.0	69.0	14.6	11.5	6.8	44.9	11.5	0.0
	16	0.0	0.0	0.0	0.0	0.0	48.5	125.6	8.7	90.1	12.1	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	104.6	42.0	14.3	75.7	3.7	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	45.4	58.7	20.6	4.2	43.3	0.0	0.0
	19	0.0	0.0	0.0	0.0	11.2	38.2	50.0	25.4	2.3	9.3	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	25.9	128.6	3.1	0.0	5.8	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	39.8	164.7	0.0	0.0	0.6	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	14.3	44.1	8.9	23.0	7.2	0.0	0.0
	23	0.0	0.0	0.0	5.3	0.0	27.5	38.9	1.3	0.0	64.6	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	21.0	23.5	1.5	62.2	18.5	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	52.9	44.3	7.9	0.0	4.1	7.2	0.0
	26	0.0	0.0	0.0	0.0	0.0	178.6	37.0	26.5	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	21.7	0.0	60.0	21.1	37.4	43.5	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	5.2	42.2	33.2	60.0	2.8	0.0	0.0
	29	0.0	0.0	0.0	4.9	0.0	7.4	84.3	29.0	4.5	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	24.3	95.4	4.8	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	29.4	0.0	169.5	60.0	0.0	0.0	0.0	0.0
Total	76.3	0.0	0.0	54.3	66.3	965.3	1680.8	453.5	739.1	360.0	194.8	2.7	
Annual rainfall in mm					4593.1								

Year- 2011												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	12.3	41.8	4.1	142.8	0.0	7.6	0.0
2	0.0	0.0	0.0	0.0	0.0	1.9	28.6	26.8	115.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	115.4	59.9	164.8	98.4	0.0	1.4	0.0
4	0.0	0.0	0.0	0.0	0.0	8.3	46.2	59.4	74.3	0.0	10.5	0.0
5	0.0	0.0	0.0	0.0	0.0	21.5	64.1	31.5	45.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	30.7	70.8	6.7	34.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	59.9	37.4	54.3	28.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	24.7	25.6	57.0	86.7	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	38.9	12.5	10.2	43.4	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	64.1	3.7	0.0	22.6	0.0	0.0	0.0
11	0.0	0.0	0.0	4.0	0.0	38.4	43.0	1.7	15.8	8.9	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	39.5	25.6	8.4	11.5	1.1	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	46.6	45.7	6.2	6.2	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	18.8	49.3	30.6	30.6	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	40.5	37.2	25.4	75.4	3.9	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	109.8	158.5	28.3	28.3	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	37.1	116.9	36.4	36.4	19.2	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	2.5	114.0	7.9	17.9	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	23.2	24.1	24.1	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	12.9	10.9	10.9	4.7	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	1.5	26.3	17.0	14.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	7.9	27.1	8.5	8.8	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	121.3	41.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	2.5	15.7	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	12.6	3.5	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	11.8	6.4	0.0	0.0	2.8	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	7.1	21.9	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	3.4	45.6	0.0	0.0	5.8	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	3.9	27.7	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	12.5	31.5	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	29.8	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	4.0	0.0	895.4	1293.4	620.2	970.1	46.4	19.5	0.0
Annual rainfall in mm					3849.0							

Year- 2012												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	53.8	11.0	33.5	73.3	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	37.4	15.9	24.9	72.4	33.1	0.0
3	0.0	0.0	0.0	0.0	0.0	23.2	106.0	28.8	18.6	96.1	12.5	0.0
4	0.0	0.0	0.0	0.0	0.0	15.1	28.5	33.9	104.4	25.8	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	56.9	2.9	47.2	30.7	4.7	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	49.8	13.1	31.3	11.8	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	27.5	22.2	63.2	25.3	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	7.4	8.4	45.1	27.3	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	5.7	37.8	8.6	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	5.3	23.0	52.0	14.2	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	7.1	96.8	153.0	23.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	5.3	93.4	16.3	29.7	21.1	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	26.9	24.0	34.5	8.5	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	24.5	6.8	6.9	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	4.2	7.6	10.3	13.8	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	48.1	18.9	7.7	10.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	30.6	52.7	23.5	20.3	0.0	0.0	0.0
18	0.0	0.0	0.0	9.5	0.0	106.5	42.1	28.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	30.0	0.0	87.9	26.8	49.3	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	23.1	15.6	27.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	5.5	53.7	32.5	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	4.2	8.8	4.9	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	11.6	16.1	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	8.2	41.5	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	93.1	7.3	24.1	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	45.2	18.4	10.2	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	68.7	43.9	55.4	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	7.3	0.0	42.1	12.6	47.8	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	67.0	18.7	120.6	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	1.5	60.9	4.5	28.5	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	6.9	41.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	46.8	6.8	1019.5	858.7	1101.0	402.9	272.3	45.6	0.0
Annual rainfall in mm					3753.6							

Month wise rainfall data of Kumta rain gauge station in mm

Year- 2001												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	De c
1	5.6	0.0	0.0	0.0	0.0	12.4	26.4	84.0	0.6	23.8	0.0	0.0
2	4.4	0.0	0.0	0.0	0.0	0.0	56.8	24.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	14.2	30.6	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.8	0.0	0.0	0.8	21.8	0.0	0.8	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	82.4	68.4	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	152.2	2.4	4.4	4.8	68.4	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	44.0	13.0	3.8	0.0	0.8	0.0	0.0
8	0.0	0.0	0.0	0.0	5.4	42.2	14.6	10.2	0.0	45.0	0.0	0.0
9	0.0	0.0	0.0	0.4	0.0	45.0	30.2	12.4	0.0	19.4	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	42.4	29.0	12.2	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	12.6	0.0	28.2	9.6	6.8	0.0	0.2	0.0	0.0
12	0.0	0.0	0.0	2.6	0.0	95.6	6.4	13.6	0.0	0.4	0.0	0.0
13	0.0	0.0	0.0	10.2	0.0	50.8	2.4	11.2	0.0	5.6	0.0	0.0
14	0.0	0.0	0.0	4.8	0.0	71.2	26.8	14.0	0.0	36.2	0.0	0.0
15	0.0	0.0	0.0	6.4	0.0	4.8	15.4	22.2	0.0	1.4	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	11.8	20.4	39.2	0.0	15.2	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	4.2	21.8	59.4	32.4	0.8	54.6	0.0
18	0.0	0.0	0.0	0.0	0.0	5.6	44.4	40.2	0.0	6.4	0.0	0.0
19	0.0	0.0	0.0	0.0	12.4	2.4	6.2	31.4	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	3.2	1.6	3.6	5.6	12.8	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	15.2	4.4	24.6	18.0	4.2	0.0	0.0
22	0.0	0.0	0.0	0.0	38.4	42.0	4.6	18.2	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	67.6	0.2	3.8	8.4	22.6	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	24.2	1.0	17.8	37.0	47.2	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	11.6	2.2	55.2	24.2	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	2.2	11.8	28.4	2.8	0.4	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	46.4	6.4	38.2	3.6	43.6	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	6.8	60.4	43.6	10.8	62.4	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	8.6	120.6	80.2	2.4	16.2	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	5.4	47.2	66.4	5.6	43.2	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	18.6	0.0	18.4	0.2	0.0	0.0	0.0	0.0
Total	10.0	0.0	0.0	37.8	250.8	921.4	787.8	653.2	304.2	228.6	54.6	0.0
Annual rainfall in mm					3248.4							

Year- 2002												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	74.8	15.2	19.6	2.4	0.4	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.2	9.8	3.2	9.9	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	46.0	6.8	29.2	13.4	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	11.8	6.4	20.4	14.2	6.4	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	6.6	2.2	19.0	22.4	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	13.8	17.2	36.4	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	4.4	4.8	7.6	19.0	4.6	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	36.2	3.2	6.2	0.2	24.6	0.0	0.0
9	0.0	0.0	0.0	0.0	42.4	1.2	22.8	73.8	4.2	19.4	0.0	0.0
10	0.0	0.0	0.0	0.0	34.8	0.4	98.6	55.6	0.2	32.8	0.0	0.0
11	0.0	0.0	0.0	0.6	4.2	40.8	138.2	16.8	3.6	1.2	0.0	0.0
12	0.0	0.0	0.0	0.0	0.4	28.6	4.6	39.2	0.2	6.4	0.0	0.0
13	0.0	0.0	0.0	0.2	0.4	1.8	0.2	38.8	0.2	185.6	0.0	0.0
14	0.0	0.0	0.0	1.4	0.0	132.8	2.2	3.8	0.0	18.8	0.0	0.0
15	0.0	0.0	0.0	0.0	0.2	56.4	7.4	4.6	0.0	0.4	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	176.8	4.0	16.8	0.6	72.6	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	58.2	20.4	34.2	0.0	33.8	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	74.6	1.6	13.0	0.0	1.0	0.0	0.0
19	0.0	0.0	0.0	0.0	33.2	93.4	3.6	19.2	0.0	0.2	0.0	0.0
20	0.0	0.0	0.0	0.0	67.8	95.2	1.0	8.4	0.0	0.2	0.0	0.0
21	0.0	0.0	0.0	0.0	9.6	68.0	17.4	1.4	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	8.8	2.6	25.6	30.8	22.4	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	48.2	5.4	9.6	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	10.4	8.4	10.2	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	13.6	0.2	26.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	7.2	13.8	1.8	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	39.8	22.4	1.8	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	16.4	13.6	26.6	0.2	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	8.2	10.4	14.8	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	38.8	13.4	4.4	0.0	1.2	3.6	0.0	0.0
31	0.0	0.0	0.0	0.0	19.6	0.0	0.8	0.0	0.0	31.2	0.0	0.0
Total	0.0	0.0	0.0	11.0	283.0	1190.	514.6	531.4	113.7	438.6	0.0	0.0
Annual rainfall in mm					3083.1							

Year- 2003													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	0.0	57.6	7.6	5.2	5.8	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.8	49.8	5.8	10.6	1.6	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	29.0	24.6	23.8	27.2	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	91.2	15.8	6.2	53.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	106.2	97.8	0.4	14.6	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	2.2	114.6	16.2	93.2	1.2	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	5.4	118.2	27.6	28.8	0.2	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	0.2	28.9	59.2	18.2	0.2	0.0	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.2	55.0	6.9	30.6	0.0	3.8	0.0
	10	0.0	0.0	0.0	0.0	0.0	12.6	29.6	3.2	1.2	1.6	0.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	5.8	15.6	5.4	0.6	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.4	68.6	18.8	26.6	10.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	126.2	16.6	9.8	8.2	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	12.4	89.8	7.2	2.6	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	40.2	73.8	9.6	25.2	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	56.4	45.0	15.2	27.2	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	43.8	27.2	63.8	29.6	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	9.2	15.4	23.6	2.8	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	106.8	30.8	58.0	0.2	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	84.2	17.6	17.2	0.6	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	163.2	4.8	52.8	0.0	14.2	0.0	0.0
	22	0.0	0.0	5.8	0.0	0.0	290.8	1.2	4.6	0.0	28.6	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	30.6	76.8	6.2	0.0	54.8	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	9.8	39.6	2.6	0.2	4.6	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	39.2	5.2	20.2	7.2	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	9.4	10.6	42.0	0.2	0.0	0.0	0.0
	27	0.0	0.0	0.2	0.0	0.0	19.6	25.6	14.2	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	35.2	16.8	5.4	26.2	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	0.0	27.2	41.2	2.6	0.2	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	67.6	23.0	38.8	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	6.8	85.2	0.0	0.0	0.0	0.0
Total	0.0	0.0	6.0	0.0	0.4	1267.6	1282.3	775.7	359.2	207.6	3.8	0.0	
Annual rainfall in mm					3902.6								

Year- 2004													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	10.6	2.4	39.6	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	1.2	0.2	16.8	0.0	0.4	11.4	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	54.4	98.2	0.0	20.4	8.2	0.0
	4	0.0	0.0	0.0	0.0	0.0	12.0	7.8	83.4	0.0	49.8	0.0	0.0
	5	0.0	0.0	0.0	0.0	10.6	30.2	0.2	60.2	0.0	43.8	0.0	0.0
	6	0.0	0.0	0.0	0.2	0.2	73.0	0.2	29.2	0.2	0.2	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.8	59.2	0.0	24.4	9.2	0.0	0.4	0.0
	8	0.0	0.0	0.0	0.0	2.4	136.2	0.6	31.2	9.8	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	1.4	138.4	2.8	11.2	16.4	0.0	0.4	0.0
	10	0.0	0.0	0.0	0.0	9.2	93.8	49.8	7.2	19.6	0.0	0.8	0.0
	11	0.0	0.0	0.0	0.0	0.2	81.2	51.2	3.8	15.2	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	14.6	112.8	46.8	27.6	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	30.6	88.2	112.0	3.2	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	2.8	18.8	42.0	26.4	0.8	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	4.2	22.4	29.2	6.2	0.4	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	56.2	18.6	25.2	39.2	0.0	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	23.8	18.4	32.0	32.4	0.8	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	96.6	24.0	2.4	23.2	0.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	13.2	1.2	12.8	20.2	0.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	25.0	2.4	8.0	27.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	10.4	0.0	26.8	15.6	22.6	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	20.2	0.0	40.2	11.8	34.2	0.8	0.0	0.0
	23	0.0	0.0	0.0	0.0	2.4	0.0	48.2	21.2	1.2	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	3.6	1.6	49.6	12.2	0.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	4.8	15.8	24.0	5.4	0.0	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	115.2	56.6	2.2	0.8	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	9.0	42.0	17.6	5.2	32.2	3.8	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.6	32.6	15.4	0.2	6.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	2.2	1.0	41.4	0.4	1.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	4.8	2.6	25.2	0.0	0.0	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	0.0	0.0	21.2	0.0	0.0	0.0	0.0	0.0
	Total	0.0	0.0	0.0	0.2	304.6	997.6	888.4	812.8	201.2	119.2	21.2	0.0
Annual rainfall in mm						3345.2							

Year- 2005												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	2.0	0.0	0.0	0.0	8.4	38.6	21.8	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	2.6	6.0	70.2	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	18.8	20.2	3.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	20.2	37.2	1.4	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	104.0	18.2	15.6	0.0	0.0	0.0
6	0.0	0.0	0.0	0.4	0.0	0.0	7.4	11.4	11.2	0.0	0.0	0.0
7	0.0	0.0	0.0	0.4	0.0	6.0	34.2	7.0	5.2	0.0	0.0	0.0
8	0.0	0.0	0.0	27.2	0.0	0.0	0.6	58.2	0.2	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.6	2.0	46.6	2.8	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	29.2	7.6	11.2	10.8	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	9.2	62.2	12.0	16.2	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	5.8	92.8	8.8	43.2	28.2	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.4	72.6	19.2	23.6	8.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	4.0	91.8	7.4	21.2	30.2	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	1.0	0.2	2.4	12.8	15.2	0.0	0.0
16	0.0	0.0	0.0	6.8	0.0	0.0	0.0	16.8	5.8	0.4	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	58.2	8.6	10.2	9.2	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	87.0	38.6	25.8	1.6	4.8	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	52.2	3.4	14.2	1.8	15.2	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	92.0	127.8	1.8	34.2	0.4	0.0	0.0
21	0.0	0.0	0.0	0.4	0.0	88.6	33.2	7.4	4.8	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	205.0	42.0	8.8	41.2	0.0	0.0	0.0
23	0.0	0.0	0.0	0.6	0.0	98.8	68.2	2.6	134.2	0.0	0.0	0.0
24	0.0	0.0	0.0	4.2	0.0	4.8	135.6	4.6	14.4	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	4.4	121.2	1.2	21.8	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	10.2	4.6	10.8	5.8	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	4.2	19.0	0.0	0.0	0.4	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	29.8	21.2	0.0	0.0	0.8	0.0	0.0
29	0.0	0.0	0.0	0.0	37.6	24.6	25.2	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	17.8	63.8	0.0	0.0	0.2	0.0	0.0
31	2.4	0.0	0.0	0.0	0.2	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Total	2.4	2.0	0.0	40.0	48.0	839.2	1280.2	451.0	436.2	103.8	0.0	0.0
Annual rainfall in mm					3202.8							

Year- 2006													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	107.2	9.8	33.6	15.0	13.6	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	88.6	29.0	11.0	13.6	60.6	0.6	0.0
	3	0.0	0.0	0.0	0.0	3.4	38.2	25.6	32.4	0.0	55.2	4.8	0.0
	4	0.0	0.0	0.0	0.0	0.0	25.0	12.8	11.0	0.0	14.6	2.4	0.0
	5	0.0	0.0	0.0	0.0	0.0	14.6	7.8	13.2	0.0	8.0	1.2	0.0
	6	0.0	0.0	0.0	0.0	0.0	9.8	27.0	32.4	10.2	5.6	17.2	0.0
	7	0.0	0.0	0.0	0.0	0.0	0.4	18.4	26.0	0.0	26.4	2.2	0.0
	8	0.0	0.0	0.0	0.0	0.0	6.6	64.2	105.4	0.0	70.2	0.4	0.0
	9	0.0	0.0	0.0	0.0	0.0	1.2	13.2	36.6	0.0	61.6	0.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	10.6	11.0	16.2	44.2	0.0	0.0	0.0
	11	0.0	0.0	10.6	0.0	0.0	12.4	26.4	41.2	6.2	0.0	0.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	2.0	46.2	19.6	0.0	0.0	0.0	0.0
	13	0.0	0.0	0.0	0.0	0.0	0.2	33.2	15.0	38.4	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	0.0	77.2	9.4	29.4	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	4.8	36.4	26.6	84.4	0.0	0.0	0.0
	16	0.0	0.0	0.0	0.0	0.0	50.4	6.4	9.8	47.4	0.0	0.0	0.0
	17	0.0	0.0	0.0	0.0	0.0	13.0	11.4	19.0	94.2	0.0	0.0	0.0
	18	0.0	0.0	0.0	0.0	0.0	0.0	11.0	35.6	38.8	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	0.0	0.0	17.4	38.8	8.0	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	0.0	38.2	1.8	48.8	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	20.2	21.0	1.6	16.2	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	1.2	4.6	1.2	21.0	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	0.6	6.8	14.4	6.2	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	0.0	69.2	23.2	1.2	2.2	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	8.2	78.2	9.4	0.0	0.2	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	12.8	112.4	4.2	0.0	29.6	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	4.6	71.6	11.0	0.0	0.0	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	123.8	46.8	22.6	10.6	0.0	0.0	0.0	0.0
	29	0.0	0.0	0.0	0.0	0.8	138.0	12.8	0.2	0.0	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	98.6	14.4	5.6	2.0	12.4	0.2	0.0	0.0
	31	0.0	0.0	0.0	0.0	84.4	0.0	20.4	1.8	0.0	0.0	0.0	0.0
Total	0.0	0.0	10.6	0.0	336.6	937.6	664.2	567.6	566.4	316.0	28.8	0.0	
Annual rainfall in mm					3427.8								

Year- 2007												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	De
1	0.0	0.0	0.0	0.0	0.0	0.8	34.6	3.0	56.3	27.5	0.8	0.0
2	0.0	0.0	0.0	0.0	0.0	0.2	84.4	53.7	99.7	2.7	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	19.2	30.4	153.3	132.5	67.9	0.0	0.0
4	0.0	0.0	0.0	0.0	5.7	0.0	32.0	43.2	62.9	0.2	0.0	0.0
5	0.0	0.0	0.0	0.0	1.0	1.2	23.4	108.0	16.1	0.6	0.2	0.0
6	0.0	0.0	0.0	0.0	0.0	4.0	1.4	106.2	17.9	2.2	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	5.9	12.8	81.7	51.5	0.0	1.0	0.0
8	0.0	0.0	0.0	0.0	0.2	0.8	25.6	27.2	7.5	7.1	35.5	0.0
9	0.0	0.0	0.0	0.0	0.0	0.4	15.1	10.4	1.5	0.0	0.3	0.0
10	0.0	0.0	0.0	0.0	0.0	34.2	54.6	24.4	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	26.7	28.1	16.6	0.0	1.7	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	4.7	3.0	9.1	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	38.0	19.8	11.2	0.3	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	33.8	22.7	3.3	6.1	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	40.7	23.0	43.5	19.2	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	136.8	18.8	62.2	12.0	0.0	0.0	0.0
17	0.0	0.0	0.0	5.1	0.0	71.2	9.9	1.4	36.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	70.8	9.2	12.8	36.6	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	70.9	6.6	2.0	15.5	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	130.3	19.3	33.8	14.6	40.4	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	65.6	8.2	71.0	2.6	0.9	0.0	1.4
22	0.0	0.0	0.0	19.4	4.8	81.8	17.1	17.0	4.1	0.2	0.0	0.0
23	0.0	0.0	0.0	0.0	0.8	120.9	14.2	44.2	36.4	38.2	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	124.7	42.6	3.0	73.4	1.9	0.0	0.0
25	0.0	0.0	0.0	0.0	2.0	79.2	11.2	5.8	59.6	1.8	0.0	0.0
26	0.0	0.0	0.0	0.0	5.2	58.4	9.0	61.4	9.1	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	42.6	53.7	5.8	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	15.8	7.0	7.8	12.1	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	40.4	10.6	92.3	16.2	49.0	4.9	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	41.1	59.6	42.1	62.6	0.4	0.0	0.0
31	0.0	0.0	0.0	0.0	9.7	0.0	23.6	75.7	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	24.5	69.8	1331.3	813.2	1157.0	895.1	198.6	37.8	1.4
Annual rainfall in mm					4528.7							

Year- 2008												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	38.0	27.2	2.1	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	1.4	44.6	2.2	6.4	0.2	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	6.0	19.5	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	1.2	4.5	38.6	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	2.5	22.0	4.3	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	9.6	5.7	3.4	12.1	0.2	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	90.5	2.2	18.6	3.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	76.6	11.0	54.8	16.2	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	81.0	33.8	112.0	18.2	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	72.3	5.0	75.5	46.6	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	58.8	13.8	107.0	57.6	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	91.5	13.5	109.0	51.9	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	106.4	5.0	136.1	29.2	0.0	0.0	0.0
14	0.0	0.0	2.1	0.0	0.0	18.2	0.0	80.7	17.4	0.0	0.0	0.0
15	0.0	4.0	0.0	0.0	0.0	37.4	4.5	47.5	1.4	0.0	0.0	0.0
16	0.0	0.0	8.2	0.0	0.0	7.8	0.4	21.5	28.1	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	5.7	0.0	18.2	3.2	0.0	1.4	0.0
18	0.0	0.0	0.0	0.0	0.0	2.9	18.5	4.3	2.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	2.6	11.0	3.7	19.9	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.5	34.1	0.0	2.2	0.0	0.0	0.0
21	0.0	0.0	21.8	0.0	0.0	2.6	3.4	6.3	3.1	0.0	0.0	0.0
22	0.0	0.0	42.6	0.0	0.0	3.5	40.2	2.6	12.4	2.0	0.0	0.0
23	0.0	0.0	61.1	0.0	0.0	1.9	4.4	5.0	1.0	0.5	0.0	0.0
24	0.0	0.0	1.2	0.0	0.0	0.7	19.1	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	37.2	2.0	1.3	4.4	83.7	0.0	0.0	2.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	78.4	21.9	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	9.5	0.0	5.9	19.7	67.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.2	53.0	65.5	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	54.0	5.1	0.0	0.0	0.0	0.7	0.0
30	0.0	0.0	0.0	0.0	3.7	28.4	16.2	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	2.2	0.0	39.9	0.0	0.0	0.0	0.0	0.0
Total	0.0	4.0	183.	2.0	13.3	913.5	640.0	898.0	334.0	4.9	2.1	0.0
Annual rainfall in mm					2995.5							

Year- 2009													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	1.0	26.7	11.4	19.7	26.7	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.5	101.1	2.5	91.9	59.1	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	16.8	160.7	10.0	16.6	171.8	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	14.5	71.1	1.1	50.2	41.2	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	2.2	82.9	7.2	83.7	3.0	0.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	104.1	136.3	1.8	38.4	3.0	0.0	0.0
	7	0.0	0.0	0.0	0.0	0.0	118.2	95.0	4.2	20.6	0.0	0.0	0.0
	8	0.0	0.0	0.0	0.0	0.0	44.0	122.1	18.4	16.0	0.0	0.0	0.0
	9	0.0	0.0	0.0	0.0	5.0	0.2	96.5	11.5	3.4	0.0	7.7	0.0
	10	0.0	0.0	0.0	0.0	0.0	0.0	30.8	3.2	2.0	0.0	14.4	0.0
	11	0.0	0.0	0.0	0.0	0.0	0.0	32.4	15.8	2.4	0.0	17.0	0.0
	12	0.0	0.0	0.0	0.0	0.0	0.0	18.5	2.2	0.0	0.0	41.0	0.0
	13	0.0	0.0	3.7	0.0	0.0	1.8	13.6	3.2	0.0	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	0.0	64.8	2.1	0.0	0.0	0.0	0.0
	15	0.0	0.0	0.0	0.0	0.0	24.0	28.0	0.0	1.0	0.0	9.6	0.0
	16	0.0	0.0	0.0	0.0	0.0	15.8	47.8	3.9	5.8	0.0	10.8	0.0
	17	0.0	0.0	0.0	0.0	0.0	76.6	50.0	0.3	0.0	0.0	4.0	0.0
	18	0.0	0.0	0.0	0.0	29.6	13.9	65.2	22.0	0.0	0.0	0.0	0.0
	19	0.0	0.0	0.0	0.0	12.3	98.0	43.6	1.9	0.7	0.0	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	1.5	44.6	0.0	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	15.1	10.5	7.8	0.0	4.5	0.0	8.4	0.0
	22	0.0	0.0	0.0	0.0	3.2	14.5	6.2	0.0	0.0	0.0	0.0	0.0
	23	0.0	0.0	0.0	0.0	0.0	17.2	13.3	31.2	8.6	0.0	0.0	0.0
	24	0.0	0.0	0.0	0.0	50.4	18.4	10.4	42.6	0.0	0.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	3.2	34.0	2.0	88.0	0.7	0.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	2.8	58.2	2.9	9.9	2.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	0.0	0.0	52.0	21.8	9.8	25.4	0.0	0.0	0.0
	28	0.0	0.0	0.0	1.0	0.0	43.3	6.1	33.0	0.0	0.0	0.0	0.6
	29	0.0	0.0	0.0	0.0	0.0	29.0	38.2	10.0	12.2	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	11.2	7.0	29.8	179.2	2.8	0.0	3.3
	31	0.0	0.0	0.0	0.0	0.0	0.0	2.6	30.4	0.0	0.0	0.0	0.0
Total	0.0	0.0	3.7	1.0	121.6	821.4	1450.0	407.4	585.0	307.6	112.9	3.9	
Annual rainfall in mm					3814.5								

Year- 2010													
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	1	0.0	0.0	0.0	0.0	0.0	4.6	19.3	25.8	8.4	111.0	6.7	0.0
	2	0.0	0.0	0.0	0.0	0.0	1.6	154.3	14.7	9.6	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	7.8	0.0	76.0	12.2	8.2	2.4	26.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	5.9	10.9	57.4	14.3	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.0	0.0	66.9	4.1	10.4	0.0	18.0	0.0
	6	0.0	0.0	0.0	0.0	0.0	1.5	51.7	1.4	57.9	0.0	2.2	0.0
	7	0.0	0.0	0.0	0.0	0.0	4.6	36.6	3.0	65.0	34.7	0.8	0.0
	8	0.0	0.0	0.0	0.0	0.0	8.7	49.8	11.7	24.5	5.0	13.2	0.0
	9	0.0	0.0	0.0	0.0	0.0	0.6	9.6	1.5	29.3	0.0	85.0	0.0
	10	0.0	0.0	0.0	0.0	0.0	0.2	0.8	6.7	18.6	9.2	3.0	0.0
	11	0.0	0.0	0.0	0.0	0.0	0.0	6.9	50.7	11.2	0.0	3.8	4.2
	12	4.0	0.0	0.0	0.0	0.0	3.6	6.8	2.6	0.0	1.2	122.2	0.0
	13	0.0	0.0	0.0	0.0	0.0	37.4	17.2	4.1	14.6	0.0	0.0	0.0
	14	0.0	0.0	0.0	0.0	0.0	62.6	5.0	3.0	26.0	55.6	0.0	0.0
	15	0.2	0.0	0.0	0.4	0.0	61.5	14.0	0.0	50.2	10.2	6.3	0.0
	16	0.0	0.0	0.0	0.0	0.0	64.8	158.5	9.7	52.8	61.2	2.5	0.0
	17	0.0	0.0	0.0	0.0	0.0	56.0	48.8	12.0	96.7	12.0	0.2	0.0
	18	0.0	0.0	0.0	0.0	0.0	47.1	40.8	33.2	7.4	3.2	0.0	0.0
	19	0.0	0.0	0.0	0.0	26.4	23.2	56.4	10.1	0.0	16.4	0.0	0.0
	20	0.0	0.0	0.0	0.0	0.0	45.5	99.5	0.5	0.0	0.0	0.0	0.0
	21	0.0	0.0	0.0	0.0	0.0	3.2	109.9	0.0	0.0	0.0	0.0	0.0
	22	0.0	0.0	0.0	0.0	0.0	7.0	62.6	29.6	26.3	9.6	0.0	0.0
	23	0.0	0.0	0.0	0.0	2.0	21.8	19.2	2.6	0.0	93.9	0.0	0.0
	24	0.0	0.0	0.0	1.2	0.0	23.3	6.9	5.0	29.2	12.0	0.0	0.0
	25	0.0	0.0	0.0	0.0	0.0	57.5	16.6	16.3	0.0	1.0	0.0	0.0
	26	0.0	0.0	0.0	0.0	0.0	190.6	56.1	28.2	0.0	0.0	0.0	0.0
	27	0.0	0.0	0.0	29.0	0.0	124.0	22.7	37.5	6.1	0.0	0.0	0.0
	28	0.0	0.0	0.0	0.0	0.0	10.5	46.4	9.8	57.4	0.0	0.0	0.0
	29	0.0	0.0	0.0	28.3	0.0	5.7	39.3	18.0	29.2	0.0	0.0	0.0
	30	0.0	0.0	0.0	0.0	0.0	15.4	93.9	7.1	7.2	0.0	0.0	0.0
	31	0.0	0.0	0.0	0.0	15.6	0.0	147.2	64.6	0.0	0.0	0.0	0.0
	Total	4.2	0.0	0.0	58.9	51.8	882.5	1545.6	436.6	703.6	452.9	289.9	4.2
Annual rainfall in mm						4430.2							

Year- 2011												
Month Date	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	2.1	33.8	45.7	0.8	98.8	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	33.0	61.4	100.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	130.6	66.9	86.6	59.2	0.0	0.4	0.0
4	0.0	0.0	0.0	0.0	0.0	10.8	142.6	126.6	30.0	0.0	5.4	0.0
5	0.0	0.0	0.0	0.0	0.0	57.4	50.9	36.7	22.2	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	33.4	26.6	5.0	17.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	68.4	10.6	58.4	39.5	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	15.3	37.8	87.8	38.0	4.1	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	40.0	9.0	2.4	27.6	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	36.4	9.6	3.8	5.4	0.0	0.0	0.0
11	0.0	0.0	0.0	71.4	0.0	52.8	57.0	9.2	11.4	3.4	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	50.6	40.6	7.4	7.8	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	67.9	18.5	6.1	1.1	1.4	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	38.9	24.2	0.4	21.2	0.0	0.0	0.0
15	0.0	0.0	0.0	0.2	0.0	16.0	51.4	36.0	31.4	1.8	0.0	0.0
16	0.0	0.0	0.0	15.6	0.0	95.0	157.5	56.8	13.4	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	27.8	64.7	90.6	2.8	1.6	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	6.8	58.0	35.3	35.6	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.2	24.0	89.0	30.8	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.2	9.8	28.8	2.2	22.6	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	7.6	15.6	27.9	27.2	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	3.7	45.8	10.8	17.7	4.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	95.4	33.7	48.8	2.5	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	1.5	8.6	24.0	0.3	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	1.8	1.4	11.7	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	18.2	16.5	12.6	0.0	15.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	6.0	19.0	17.8	0.0	0.0	0.4	0.0
28	0.0	0.0	0.0	0.0	0.0	8.0	19.7	13.0	0.0	6.2	0.2	0.0
29	0.0	0.0	0.0	0.0	0.6	2.7	31.8	19.0	0.0	3.2	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	7.4	36.9	49.2	0.0	15.2	0.0	0.0
31	0.0	0.0	0.0	0.0	5.5	0.0	35.0	73.6	0.0	0.4	0.0	0.0
Total	0.0	0.0	0.0	87.2	11.9	976.7	1167.4	1144.4	629.4	74.9	6.4	0.0
Annual rainfall in mm					4098.3							

Year- 2012												
Month	Jan	Feb	Mar	Apl	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	127.	21.6	46.1	22.6	0.5	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	58.3	12.2	29.1	28.2	15.5	0.0
3	0.0	0.0	0.0	0.0	0.0	1.8	55.2	26.7	34.8	67.5	12.8	0.0
4	0.0	0.0	0.0	0.0	0.0	9.2	0.8	20.8	14.5	34.8	1.0	0.0
5	0.0	0.0	0.0	3.3	0.0	37.4	1.4	5.0	34.1	8.8	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	29.2	7.2	16.0	17.6	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	9.4	18.0	19.8	8.6	0.0	5.1	0.0
8	0.0	0.0	0.0	0.0	0.0	23.0	3.6	121.2	34.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	10.8	5.3	23.2	7.3	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	15.0	37.4	31.2	34.2	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	6.0	76.5	97.3	6.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	54.0	16.2	63.0	22.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	18.4	18.2	29.8	22.4	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	21.3	5.6	5.8	14.7	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	7.8	29.9	34.2	21.8	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	39.0	69.3	8.8	10.2	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	24.8	31.0	31.4	1.2	0.0	0.0	0.0
18	0.0	0.0	0.0	2.6	0.0	96.6	38.4	75.2	2.1	0.0	0.0	0.0
19	0.0	0.0	0.0	27.8	0.0	99.3	17.7	27.4	12.5	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	18.2	9.8	3.5	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	1.0	27.0	9.2	0.0	0.4	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	11.8	9.5	0.2	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	18.0	16.2	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	63.0	67.8	4.6	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	53.4	4.2	14.7	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	15.8	0.0	25.0	18.8	97.5	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	40.2	9.2	78.5	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	2.6	0.0	54.2	2.6	61.1	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	4.4	7.5	50.1	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	88.0	2.4	25.4	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	10.6	26.8	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	52.1	0.0	880.2	803.	1042.2	373.	162.3	34.9	0.0
Annual rainfall in mm					3348.1							

Slide No of present study	Slide No according to Inventory	Location	Toposh heet no	Latitude			Longitude			ELEVATION (M)	Taluk	District	State	Landmarks	Date of occurrence	Time of occurrence	Dimension of slide			Base length (Toe length)	Type of slide	History	Overburden		Material involved	Depth of weathering	Volume of material(cu m)
				Deg	Min	Sec	Deg	Min	Sec								Length (In m)	Width (In m)	Depth(in m)				Type	depth			
1	KA-389	On NH-17 near Aligadde Karwar	48J/1	14	48	14.5	74	7	22.7	22	Karwar	UttarKannada	Karnataka	Near Aligadde Karwar on NH-17	Oct-09	NA	18.00	30.00	2.0	34.00	Debris slide	New	Soil	2.0	Weathered Granite	>5.0 m	540.0
2	KA-390	500 m from KA-389 towards Ankola on NH-17.	48J/1	14	47	49.4	74	6	54.7	22	Karwar	UttarKannada	Karnataka	500 m from KA-389 towards Ankola.	Oct-09	NA	22.00	30.00	1.0	32.00	Debris slide	New	Soil	1.5	Weathered Granite	>5.0 m	330.0
3	KA-391	500 m from KA-390 towards Ankola on NH-17.	48J/1	14	47	42.1	74	6	58.9	9	Karwar	UttarKannada	Karnataka	500 m from KA-390 towards Ankola on NH-17.	NA	NA	39.00	14.00	1.0	20.00	Rock fall	New	Soil	1.0	Weathered Granite	>5.0 m	273.0
4	KA-392	500 m from KA-391 towards Ankola on NH-17.	48J/1	14	47	41.3	74	6	55.8	14	Karwar	UttarKannada	Karnataka	200 m from KA-391 towards Ankola.	NA	NA	42.00	18.00	1.0	20.00	Composite slide (right side rock left side debris)	New	Soil	1.0	Weathered Granite	>5.0 m	378.0
5	KA-393	On NH-17 near Baithkal enclave	48J/1	14	47	26.4	74	6	53.3	24	Karwar	UttarKannada	Karnataka	On NH-17 near Baithkal enclave	NA	NA	15.00	40.00	1.0	52.50	Composite slide (right side rock left side debris)	Old and reactivated	Soil	1.0	Weathered Granite	>5.0	300.0
6	KA-394	100 m from KA-393 towards Ankola.	48J/1	14	47	25.6	74	6	57.4	30	Karwar	UttarKannada	Karnataka	100 m from KA-393 towards Ankola.	NA	NA	16.00	19.00	1.5	31.00	Rock fall	Old and reactivated	Soil	1.0	Weathered Granite	>5.0	228.0
7	KA-395	50 m from KA-394 towards Ankola.	48J/1	14	47	27.8	74	6	59.1	18	Karwar	UttarKannada	Karnataka	50 m from KA-394 towards Ankola.	NA	NA	13.00	17.00	1.0	18.00	Debris slump	Old and reactivated	Soil	1.0	Weathered Granite	>5.0	110.5
8	KA-396	800 m after Kiaga gate towards Ankola	48J/1	14	46	54.5	74	8	8.2	29	Karwar	UttarKannada	Karnataka	800 m after Kiaga gate towards Ankola	NA	NA	10.00	15.00	0.5	17.00	Debris slump	New	Soil	1.0	Weathered Granite	>5.0	37.5
9	KA-397	50 m from slide KA-396 towards Ankola	48J/1	14	46	53.8	74	8	10	35	Karwar	UttarKannada	Karnataka	50 m from slide KA-396 towards Ankola	Oct-09	NA	220.00	90.00	3.0	100.00	Debris flow	New	Soil	1.0	Weathered Granite	0.5	29700.0
10	KA-398	50 m-80 m from slide KA-397 towards Ankola	48J/1	14	46	53.4	74	8	14.4	41	Karwar	UttarKannada	Karnataka	50 m-80 m from slide KA-397 towards Ankola	NA	NA	15.00	42.00	1.0	46.50	Rock fall	Old and reactivated	Soil	1.0	Weathered Granite	>10.0	315.0
11	KA-399	150 m from slide KA-398 towards Ankola	48J/1	14	46	53.9	74	8	17.3	47	Karwar	UttarKannada	Karnataka	150 m from slide KA-398 towards Ankola	NA	NA	11.00	12.50	0.5	13.40	Debris slump	Old	Soil	1.0	Weathered Granite	>10.0	34.4
12	KA-400	Near Karwar-Ankola taluka boundary	48J/1	14	46	58.7	74	8	28.1	57	Karwar	UttarKannada	Karnataka	Near Karwar-Kumata taluka boundary	Oct-09	NA	75.00	85.00	2.0	40.00	Debris slide	New	Soil	1.0	Weathered Granite	>10.0	2625.0
13	KA-401	20 m from slide KA-400 towards Ankola	48J/1	14	46	57.9	74	8	30.1	54	Ankola	UttarKannada	Karnataka	20 m from slide KA-400 towards Ankola	NA	NA	26.00	16.00	0.5	18.60	Debris slump	Old and reactivated	Soil	1.0	Weathered Granite	>10.0	104.0
14	KA-402	1 km from slide no KA-401 towards Ankola	48J/1	14	46	53.4	74	8	42.7	31	Ankola	UttarKannada	Karnataka	1 km from slide no KA-401 towards Ankola	NA	NA	17.20	10.30	0.5	13.40	Debris slump	New	Soil	1.0	Weathered Granite	>10.0	44.3
15	KA-403	150-200 m from slide no KA-402 towards Ankola	48J/1	14	46	51.2	74	8	47.5	32	Ankola	UttarKannada	Karnataka	150-200 m from slide no KA-402 towards Ankola	NA	NA	52.00	41.00	1.0	44.00	Debris slide	New	Soil	1.0	Weathered Granite	>10.0	1066.0
16	KA-404	On NH-17	48J/6	14	44	57.7	74	15	19.7	24	Ankola	UttarKannada	Karnataka	On NH-17	NA	NA	10.00	11.50	0.5	12.50	Debris slump	Old	Soil	1.0	Weathered Granite	>10.0	28.8
17	KA-405	On NH-17	48J/6	14	44	55.4	74	15	22.3	35	Ankola	UttarKannada	Karnataka	On NH-17	NA	NA	12.00	11.00	0.5	14.00	Debris slump	Old	Soil	1.0	Weathered Granite	>10.0	33.0
18	KA-406	On NH-17 near 126 mile stone , 4 km to	48J/6	14	44	48.5	74	15	59.9	40	Ankola	UttarKannada	Karnataka	On NH-17 near 126 mile stone , 4 km to Ankola	NA	NA	12.00	16.00	0.5	17.00	Debris slump	Old	Soil	1.0	Weathered Granite	>10.0	48.0
19	KA-407	3 km from Kumta towards Ankola	48J/7	14	27	16.5	74	26	18	10	Kumta	UttarKannada	Karnataka	3 km from Kumta towards Ankola	NA	NA	13.00	20.00	1.0	22.00	Earth slump	New	Soil	1.0	Weathered Granite	>8.0	130.0
20	KA-408	1 km from Slide no KA-407 towards Ankola	48J/7	14	27	27.5	74	26	15.9	14	Kumta	UttarKannada	Karnataka	1 km from Slide no KA-407 towards Ankola	NA	NA	18.00	69.00	2.0	78.00	Debris slide	New	Soil	1.0	Weathered Granite	>8.0	1242.0

21	KA-409	900 m from slide no KA-408 towards Ankola on NH-17.	48J/7	14	27	34.6	74	26	15.1	17	Kumta	UttarKannada	Karnataka	900 m from slide no KA-408 towards Ankola	NA	NA	11.00	18.00	0.5	19.80	Debris slide	New	Soil	1.0	Weathered Granite	>8.0	49.5
22	KA-410	1km from slide no KA-409 towards Ankola on NH-17	48J/7	14	28	3	74	26	17.4	18	Kumta	UttarKannada	Karnataka	1km from slide no KA-409 towards Ankola	NA	NA	9.00	14.00	0.5	14.50	Earth slump	New	Soil	1.0	Weathered Granite	>8.0	31.5
23	KA-411	1.5 km from slide no KA-410 towards Ankola on NH-17	48J/7	14	28	29.2	74	26	18.4	14	Kumta	UttarKannada	Karnataka	1.5 km from slide no KA-410 towards ankola	NA	NA	13.00	5.00	0.5	7.00	Earth slump	New	Soil	1.0	Weathered Granite	>8.0	16.3
24	KA-412	3.5 km from Mirjan towards Ankola on NH-17.	48J/6	14	31	2.5	74	24	34.2	22	Ankola	UttarKannada	Karnataka	3.5 km from Mirjan towards ankola on NH-17.	Jul-06	NA	10.00	45.00	1.0	50.00	Debris slide	Old	Soil	1.0	Weathered Granite	>8.0	225.0
25	KA-413	20 m from slide no KA-412 towards Ankola on NH-17	48J/6	14	31	1	74	24	32	22	Ankola	UttarKannada	Karnataka	20 m from slide no KA-412 towards ankola on NH-17	Jul-06	NA	10.00	45.00	1.0	60.00	Debris slide	Old	Soil	1.0	Weathered Granite	>8.0	225.0
26	KA-414	Near Banki on NH-17 towards Ankola	48J/6	14	31	30	74	24	31.7	15	Ankola	UttarKannada	Karnataka	Near Banki on NH-17 towards ankola	Jul-06	NA	19.00	110.00	2.0	200.00	Debris slide	Old	Soil	1.0	Weathered Granite	>8.0	2090.0
27	KA-415	On NH-17	48J/6	14	32	17.2	74	23	54.5	10	Ankola	UttarKannada	Karnataka	On NH-17	NA	NA	18.00	26.00	1.0	29.10	Debris slide	Old	Soil	1.0	Weathered Granite	>8.0	234.0
28	KA-416	1 km from Gangavali bridge towards Ankola	48J/6	14	36	10.1	74	22	14.7	4	Ankola	UttarKannada	Karnataka	1 km from Gangavali bridge towards Ankola	NA	NA	16.00	30.00	1.0	32.00	Debris slide	New	Soil	1.0	Weathered Granite	>7.0	240.0
29	KA-417	400 m from 10 km stone towards Ankola	48J/6	14	36	6.3	74	22	4.8	5	Ankola	UttarKannada	Karnataka	400 m 10 km stone towards Ankola	NA	NA	300.00	90.00	2.0	120.00	Debris slide	Old and reactivated	Soil	2.0	Weathered Granite	>8.0	27000.0
30	KA-418	100 m from slide no KA-417 towards Ankola	48J/6	14	36	4.3	74	22	0.4	11	Ankola	UttarKannada	Karnataka	100 m from slide no KA-417 towards Ankola	Aug-07	NA	80.00	350.00	1.0	400.00	Debris slide	Old	Soil	1.0	Weathered Granite	>8.0	14000.0
31	KA-419	1km from slide no KA-418 towards Ankola	48J/6	14	36	9.7	74	21	45.9	10	Ankola	UttarKannada	Karnataka	1km from slide no KA-418 towards Ankola	NA	NA	17.00	29.00	1.0	30.1	Debris slide	New	Soil	1.0	Weathered Granite	>8.0	246.5
32	KA-420	1km from slide no KA-419 (left side of the road) towards Ankola	48J/6	14	36	30.7	74	21	39.4	15	Ankola	UttarKannada	Karnataka	1km from slide no KA-419(left side of the road) towards Ankola	NA	NA	14.00	19.00	1.0	20.6	Debris slide	New	Soil	1.0	Weathered Granite	>8.0	133.0
33	KA-421	1km from slide no KA-419 (Right side of the road) towards Ankola	48J/6	14	36	30.7	74	21	39.4	15	Ankola	UttarKannada	Karnataka	1km from slide no KA-419 (Right side of the road) towards Ankola	NA	NA	16.00	15.00	1.0	17.1	Debris slide	New	Soil	1.0	Weathered Granite	>8.0	120.0
34	1	Near kachwad village	48J/1	14	50	1.2	74	10	39.7	9	Karwar	UttarKannada	Karnataka	Near kachwad village	Oct-09	NA	180.60	126.00	1.00	130.00	Debris slide	Old and reactivated	Soil	3.0	Laterite	>6.0	11377.8
35	2	Near slide no 1 towards karwar	48J/1	14	50	0.8	74	10	44.5	26	Karwar	UttarKannada	Karnataka	Near kachwad village	Oct-09	NA	250	100	3	175	Debris slide	Old and reactivated	Soil	3	Laterite	>6	37500.0

[illegible]

whether road cutting	Structures affected	Run out Distance(m)	Up to Location	Casualties	Rainfall	Type of Bedrock	Local geology	Regional geology	Structure				Cutslope height	Type of failure surface	Slope morphometry				Repose angle	Failure angle	horizontal extent	vertical interval
									Joint orientation	spacing	opening	filling			Slope pre failure	Slope post failure	Slide Direction	General slope gradient				
Yes	NH-17	22.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	NA				18.0	Slip	90	70	N20°W	30			8.0	15.0
Yes	NH-17	10.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	NA				18.0	Slip	90	80	Towards E	30			3.0	20.0
Yes	NH-17	15.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J1-N60W/80NE	J1- 20 cm	J1-1-5 cm	J1-Soil	12.0	Planar	80	70	N60°W	30			3.0	37.0
Yes	NH-17	18.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J2-N50W/76SW	J2-20-50 cm	J2-1-5cm	J2-Soil	14.0	Planar and slip	80	70	N40°W	30			3.0	40.0
Yes	NH-17	12.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J1-N20W/78NE	J1- 10-15 cm	J1-1 cm	J1-Soil	10.0	Wedge and slip (J-1 and J-2 joint planes making an wedge failure)	70	65	Towards S	30			5.0	12.0
									J2-N55E/88SW	J2-10-15 cm	J2-1 cm											
Yes	NH-17	12.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J3-N80W/87NE	J3-10 cm	J3-Tight	J2-Soil	25.0	Wedge (J-1 and J-2 joint planes making an wedge failure)	90	85	Towards S	30			3.0	12.0
									J1-N24W/76NE	J1- 10-15 cm	J1-1 cm	J1-Soil										
Yes	NH-17	8.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J2-N55E/vertical	J2-10-15 cm	J2-1 cm	J2-Soil	12.0	slump	90	80	Towards E	30			5.0	10.0
Yes	NH-17	7.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	NA				12.0	Slump	70	65	N50°E	25			2.0	7.0
Yes	NH-17	35.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J1-N25E/82NW	J1- 20cm-1m	J1-Tight	J2-Soil	10.0	Wedge (J-1 and J-2 joint planes making Wedge (J-1 and J-2 joint planes making	90	80	Towards N	30			14.0	210.0
Yes	NH-17	8.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J2-N55W/78NE	J2-20 cm- 1 m	J2-1-5 cm	J3-Soil	12.0		90	80	N10°E	30			3.0	12.0
Yes	NH-17	8.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J1-N35W/88NE	J1-2-5 cm	J1-Tight		10.0	slump	70	65	N35°W	25			2.0	10.0
Yes	NH-17	18.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J2-NS/86E	J2-2-5 cm	J2-Tight		10.0	Slip	80	70	N20°E	30			10.0	60.0
Yes	NH-17	8.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	NA				10.0	slump	80	75	N25°E	25			4.0	22.0
Yes	NH-17	4.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	NA				10.0	slump	80	70	N15°E	25			5.0	13.0
Yes	NH-17	12.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J1-N80E/87NW	J1- 60-80 cm	J1-Tight		10.0	Slip	80	75	N35°E	25			5.0	40.0
Yes	NH-17	8.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	J2-NS/vertical	J2-40-50 cm	J2-Tight		8.0	Slump	80	70	N30°E	25			3.0	8.0
Yes	NH-17	6.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	NA				8.0	Slump	80	70	N30°E	25			2.0	9.0
Yes	NH-17	6.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	NA				10.0	slump	90	85	N50°E	25			3.0	10.0
Yes	NH-17	6.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	NA				12.0	Slump	90	80	N75°W	20			1.0	12.0
Yes	NH-17	8.0	NH-17	Nil	NA	Weathered	Weathered	Weathered	NA				15.0	Slip	90	80	N80°E	25			1.5	16.0

Yes	NH-17	9.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				12.0	Slip	90	80	N70°E	20				1.0	10.0
Yes	NH-17	8.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				10.0	Slump	70	65	N60°W	25				0.5	7.0
Yes	NH-17	8.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				15.0	Slump	90	85	N45°E	20				0.5	10.0
Yes	NH-17	12.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				12.0	Slip	90	70	Towards E	25				1.0	8.0
Yes	NH-17	15.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				12.0	Slip	90	70	Towards E	25				1.0	8.0
Yes	NH-17	22.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				10.0	Slip	70	65	N65°E	25				1.5	17.0
Yes	NH-17	20.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				12.0	Slip	90	70	N50°E	25				1.0	17.0
Yes	NH-17	19.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				12.0	Slip	90	80	N25°W	25				2.5	14.0
Yes	NH-17	500.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				20.0	Slip	90	80	N20°W	20				100.0	280.0
Yes	NH-17	85.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				15.0	Slip	90	80	N15°W	20				3.0	76.0
Yes	NH-17	19.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				15.0	Slip	90	80	N60°E	25				2.0	15.0
Yes	NH-17	10.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				15.0	Slip	90	80	N40°E	25				2.0	12.0
Yes	NH-17	10.0	NH-17	Nil	NA	Granite	Granite	Granite	NA				15.0	Slip	80	80	S40°E	25				2.0	13.0
No	Karwar-	82.0	Karwar-	Nil	NA	Granite	Granite	Granite	NA				10.0	Slip	90	70	S50°W	20				2.0	81.0
Yes	Kadwad road	200	Kadwad road	Nil	NA	Laterite	Laterite	Laterite	NA				10	Slip	90	70	S25°W	20				2	100

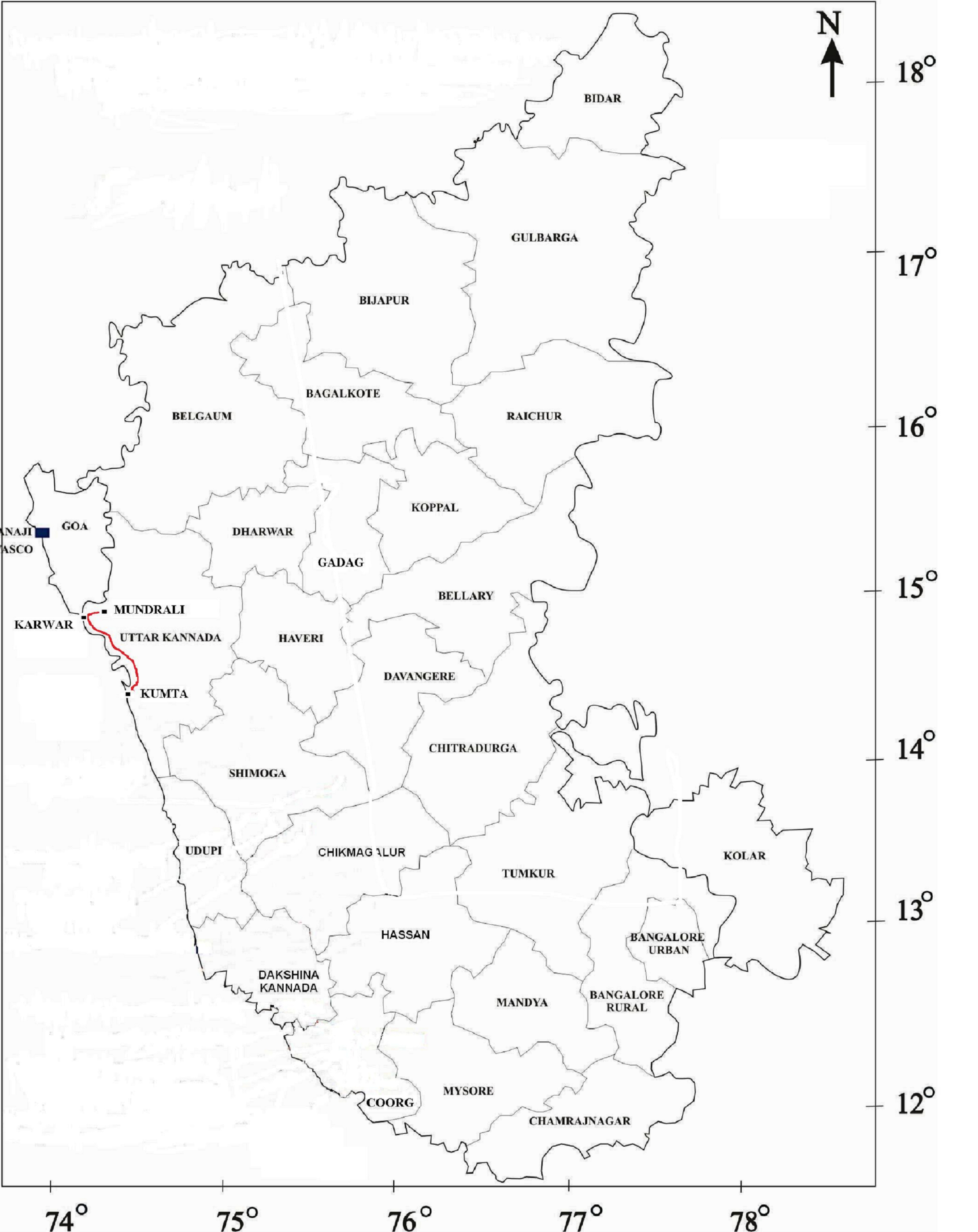
[illegible]

FACET WISE TEHD RATING OF LANDSLIDE HAZARD ZONATION BETWEEN KUMTA-KARWAR(UP TO MUNDRALI VILLAGE)

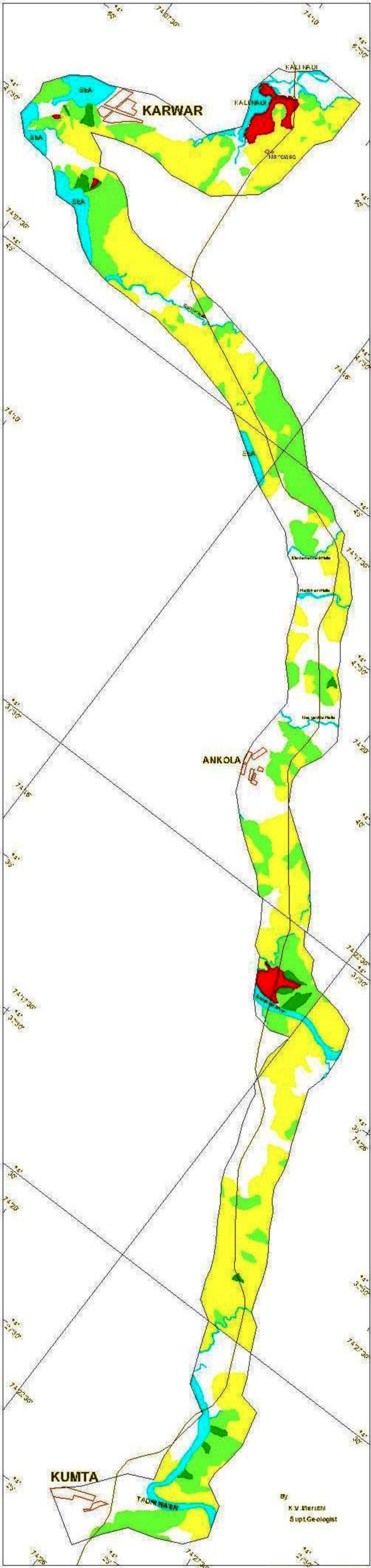
(NOTE: TEHD = Total Estimated Hazard ; VLHZ = Very Low Hazard; LHZ = Low Hazard; MHZ = Moderate Hazard; HHZ High Hazard; VHHZ = Very High Hazard)

Facet	TEHD	Zonation	Facet	TEHD	Zonation	Facet	TEHD	Zonation	Facet	TEHD	Zonation	Facet	TEHD	Zonation	Facet	TEHD	Zonation
1	5.90	LHZ	51	4.20	VLHZ	101	4.60	VLHZ	151	4.65	VLHZ	201	4.40	VLHZ	251	5.65	LHZ
2	5.25	LHZ	52	5.00	LHZ	102	3.80	VLHZ	152	5.65	LHZ	202	4.40	VLHZ	252	5.55	LHZ
3	5.30	LHZ	53	4.50	VLHZ	103	4.10	VLHZ	153	4.05	VLHZ	203	4.80	VLHZ	253	5.85	LHZ
4	5.00	LHZ	54	5.00	LHZ	104	4.48	VLHZ	154	4.05	VLHZ	204	5.10	LHZ	254	6.15	LHZ
5	5.30	LHZ	55	4.10	VLHZ	105	4.48	VLHZ	155	5.30	LHZ	205	4.85	VLHZ	255	5.65	LHZ
6	5.30	LHZ	56	4.10	VLHZ	106	4.18	VLHZ	156	5.00	LHZ	206	4.70	VLHZ	256	6.50	LHZ
7	5.45	LHZ	57	4.60	VLHZ	107	4.18	VLHZ	157	7.50	MHZ	207	5.05	LHZ	257	6.45	LHZ
8	4.95	LHZ	58	4.60	VLHZ	108	4.48	VLHZ	158	7.35	MHZ	208	4.95	LHZ	258	5.90	LHZ
9	5.10	LHZ	59	4.20	VLHZ	109	4.98	LHZ	159	5.85	LHZ	209	4.85	VLHZ	259	6.35	LHZ
10	5.00	LHZ	60	4.50	VLHZ	110	4.68	VLHZ	160	5.35	LHZ	210	4.85	VLHZ	260	6.35	LHZ
11	4.00	VLHZ	61	4.70	VLHZ	111	4.68	VLHZ	161	6.35	LHZ	211	4.50	VLHZ	261	5.60	LHZ
12	4.30	VLHZ	62	4.70	VLHZ	112	4.98	LHZ	162	8.00	MHZ	212	4.40	VLHZ	262	5.60	LHZ
13	4.60	VLHZ	63	4.20	VLHZ	113	4.40	VLHZ	163	9.00	MHZ	213	4.70	VLHZ	263	4.40	VLHZ
14	4.60	VLHZ	64	4.10	VLHZ	114	5.00	LHZ	164	7.30	MHZ	214	4.70	VLHZ	264	5.60	LHZ
15	4.30	VLHZ	65	3.60	VLHZ	115	4.50	VLHZ	165	6.00	LHZ	215	4.70	VLHZ	265	6.00	LHZ
16	4.60	VLHZ	66	4.00	VLHZ	116	4.50	VLHZ	166	6.30	LHZ	216	4.70	VLHZ	266	6.10	LHZ
17	4.60	VLHZ	67	7.80	MHZ	117	4.80	VLHZ	167	4.05	VLHZ	217	5.05	LHZ	267	4.70	VLHZ
18	4.60	VLHZ	68	4.60	VLHZ	118	4.50	VLHZ	168	4.35	VLHZ	218	5.35	LHZ	268	5.60	LHZ
19	6.05	LHZ	69	4.40	VLHZ	119	4.50	VLHZ	169	4.05	VLHZ	219	5.35	LHZ	269	7.15	MHZ
20	6.05	LHZ	70	4.20	VLHZ	120	3.55	VLHZ	170	4.35	VLHZ	220	5.20	LHZ	270	4.85	VLHZ
21	5.55	LHZ	71	3.90	VLHZ	121	3.55	VLHZ	171	4.05	VLHZ	221	5.05	LHZ	271	6.05	LHZ
22	4.00	VLHZ	72	4.70	VLHZ	122	4.20	VLHZ	172	4.05	VLHZ	222	5.90	LHZ	272	6.35	LHZ
23	5.00	LHZ	73	4.40	VLHZ	123	3.35	VLHZ	173	4.05	VLHZ	223	6.05	LHZ	273	4.40	VLHZ
24	7.30	MHZ	74	3.60	VLHZ	124	4.35	VLHZ	174	3.85	VLHZ	224	4.90	VLHZ	274	4.40	VLHZ
25	4.60	VLHZ	75	3.90	VLHZ	125	4.35	VLHZ	175	3.40	VLHZ	225	5.10	LHZ	275	4.40	VLHZ
26	4.60	VLHZ	76	3.90	VLHZ	126	3.65	VLHZ	176	3.65	VLHZ	226	5.10	LHZ	276	4.40	VLHZ
27	4.10	VLHZ	77	3.90	VLHZ	127	4.65	VLHZ	177	6.00	LHZ	227	4.90	VLHZ	277	4.40	VLHZ
28	4.30	VLHZ	78	3.90	VLHZ	128	4.35	VLHZ	178	5.50	LHZ	228	4.90	VLHZ	278	4.75	VLHZ
29	4.80	VLHZ	79	3.90	VLHZ	129	3.65	VLHZ	179	6.20	LHZ	229	5.95	LHZ	279	4.75	VLHZ
30	8.60	HHZ	80	3.90	VLHZ	130	4.00	VLHZ	180	3.25	VLHZ	230	4.90	VLHZ	280	4.40	VLHZ
31	6.10	LHZ	81	3.90	VLHZ	131	4.00	VLHZ	181	3.25	VLHZ	231	4.90	VLHZ	281	4.40	VLHZ
32	8.10	MHZ	82	4.05	VLHZ	132	3.35	VLHZ	182	3.25	VLHZ	232	5.80	LHZ	282	4.75	VLHZ
33	6.10	LHZ	83	3.90	VLHZ	133	3.35	VLHZ	183	3.25	VLHZ	233	4.60	VLHZ	283	4.90	VLHZ
34	6.45	LHZ	84	4.35	VLHZ	134	3.65	VLHZ	184	5.40	LHZ	234	5.10	LHZ	284	4.70	VLHZ
35	7.45	MHZ	85	5.75	LHZ	135	3.65	VLHZ	185	5.80	LHZ	235	4.90	VLHZ	285	4.70	VLHZ
36	5.30	LHZ	86	3.90	VLHZ	136	3.65	VLHZ	186	6.30	LHZ	236	4.40	VLHZ	286	4.70	VLHZ
37	5.50	LHZ	87	4.35	VLHZ	137	3.65	VLHZ	187	6.30	LHZ	237	5.20	LHZ	287	4.90	VLHZ
38	4.20	VLHZ	88	4.05	VLHZ	138	3.35	VLHZ	188	4.40	VLHZ	238	5.40	LHZ	288	4.90	VLHZ
39	4.20	VLHZ	89	5.05	LHZ	139	3.35	VLHZ	189	4.70	VLHZ	239	4.70	VLHZ	289	4.90	VLHZ
40	4.20	VLHZ	90	4.05	VLHZ	140	4.35	VLHZ	190	4.40	VLHZ	240	4.70	VLHZ	290	4.90	VLHZ
41	4.50	VLHZ	91	4.40	VLHZ	141	3.80	VLHZ	191	4.40	VLHZ	241	5.20	LHZ	291	6.75	LHZ
42	5.00	LHZ	92	4.70	VLHZ	142	3.65	VLHZ	192	4.40	VLHZ	242	4.70	VLHZ	292	6.45	LHZ
43	3.80	VLHZ	93	4.20	VLHZ	143	4.15	VLHZ	193	4.70	VLHZ	243	4.70	VLHZ	293	5.80	LHZ
44	4.30	VLHZ	94	4.20	VLHZ	144	3.85	VLHZ	194	4.90	VLHZ	244	4.70	VLHZ	294	5.45	LHZ
45	4.80	VLHZ	95	5.00	LHZ	145	4.15	VLHZ	195	4.90	VLHZ	245	5.00	LHZ	295	5.90	LHZ
46	4.80	VLHZ	96	4.50	VLHZ	146	4.55	VLHZ	196	4.90	VLHZ	246	5.00	LHZ	296	5.60	LHZ
47	4.80	VLHZ	97	4.50	VLHZ	147	4.15	VLHZ	197	4.90	VLHZ	247	5.00	LHZ	297	5.90	LHZ
48	4.30	VLHZ	98	6.30	LHZ	148	3.35	VLHZ	198	4.40	VLHZ	248	5.55	LHZ	298	5.15	LHZ
49	3.80	VLHZ	99	4.50	VLHZ	149	4.50	VLHZ	199	4.40	VLHZ	249	5.40	LHZ	299	5.95	LHZ
50	4.85	VLHZ	100	4.60	VLHZ	150	4.50	VLHZ	200	4.90	VLHZ	250	5.50	LHZ	300	6.05	LHZ

Facet	TEHD	Zonation	Facet	TEHD	Zonation	Facet	TEHD	Zonation	Facet	TEHD	Zonation	Facet	TEHD	Zonation	Facet	TEHD	Zonation	Facet	TEHD	Zonation
301	5.00	LHZ	351	5.35	LHZ	401	4.70	VLHZ	451	5.45	LHZ	501	6.05	LHZ	551	4.05	VLHZ	601	4.80	VLHZ
302	5.00	LHZ	352	5.45	LHZ	402	5.00	LHZ	452	4.95	LHZ	502	6.05	LHZ	552	4.05	VLHZ	602	4.80	VLHZ
303	4.40	VLHZ	353	5.10	LHZ	403	4.70	VLHZ	453	5.25	LHZ	503	5.05	LHZ	553	4.60	VLHZ	603	4.90	VLHZ
304	4.90	VLHZ	354	5.30	LHZ	404	4.70	VLHZ	454	5.80	LHZ	504	5.45	LHZ	554	4.70	VLHZ	604	4.80	VLHZ
305	4.40	VLHZ	355	5.80	LHZ	405	5.00	LHZ	455	7.90	MHZ	505	5.45	LHZ	555	4.70	VLHZ	605	5.30	LHZ
306	4.90	VLHZ	356	5.15	LHZ	406	5.00	LHZ	456	8.90	HHZ	506	5.15	LHZ	556	3.90	VLHZ	606	9.20	HHZ
307	5.10	LHZ	357	5.40	LHZ	407	4.70	VLHZ	457	6.70	LHZ	507	5.45	LHZ	557	4.20	VLHZ	607	6.10	LHZ
308	5.30	LHZ	358	5.90	LHZ	408	4.70	VLHZ	458	7.70	MHZ	508	5.05	LHZ	558	3.90	VLHZ	608	4.10	VLHZ
309	5.80	LHZ	359	6.00	LHZ	409	5.10	LHZ	459	5.20	LHZ	509	5.45	LHZ	559	3.90	VLHZ	609	4.40	VLHZ
310	5.70	LHZ	360	5.40	LHZ	410	5.10	LHZ	460	5.70	LHZ	510	5.05	LHZ	560	3.90	VLHZ	610	3.60	VLHZ
311	5.20	LHZ	361	5.40	LHZ	411	5.10	LHZ	461	5.05	LHZ	511	5.05	LHZ	561	4.05	VLHZ	611	4.25	VLHZ
312	5.60	LHZ	362	4.90	VLHZ	412	4.90	VLHZ	462	4.45	VLHZ	512	5.05	LHZ	562	4.05	VLHZ	612	3.75	VLHZ
313	6.10	LHZ	363	5.20	LHZ	413	4.50	VLHZ	463	4.55	VLHZ	513	5.05	LHZ	563	3.75	VLHZ	613	4.05	VLHZ
314	5.20	LHZ	364	4.90	VLHZ	414	4.00	VLHZ	464	5.30	LHZ	514	5.05	LHZ	564	3.75	VLHZ	614	3.75	VLHZ
315	5.20	LHZ	365	4.90	VLHZ	415	4.25	VLHZ	465	4.50	VLHZ	515	5.05	LHZ	565	4.05	VLHZ	615	5.10	LHZ
316	5.60	LHZ	366	4.40	VLHZ	416	4.45	VLHZ	466	4.50	VLHZ	516	5.10	LHZ	566	4.40	VLHZ	616	4.70	VLHZ
317	6.60	LHZ	367	4.30	VLHZ	417	4.10	VLHZ	467	6.40	LHZ	517	5.20	LHZ	567	5.10	LHZ	617	4.20	VLHZ
318	5.60	LHZ	368	3.85	VLHZ	418	4.40	VLHZ	468	7.95	MHZ	518	5.05	LHZ	568	4.70	VLHZ	618	4.20	VLHZ
319	5.40	LHZ	369	3.75	VLHZ	419	4.05	VLHZ	469	6.20	LHZ	519	5.05	LHZ	569	3.80	VLHZ	619	4.60	VLHZ
320	5.20	LHZ	370	4.75	VLHZ	420	4.20	VLHZ	470	5.40	LHZ	520	5.05	LHZ	570	3.80	VLHZ	620	4.20	VLHZ
321	6.60	LHZ	371	4.55	VLHZ	421	3.95	VLHZ	471	4.90	VLHZ	521	5.05	LHZ	571	3.95	VLHZ	621	4.20	VLHZ
322	6.10	LHZ	372	4.90	VLHZ	422	3.95	VLHZ	472	5.40	LHZ	522	7.45	MHZ	572	2.95	VLHZ	622	4.20	VLHZ
323	3.75	VLHZ	373	4.40	VLHZ	423	4.30	VLHZ	473	5.40	LHZ	523	6.05	LHZ	573	3.85	VLHZ	623	5.10	LHZ
324	4.40	VLHZ	374	4.70	VLHZ	424	3.90	VLHZ	474	4.40	VLHZ	524	4.75	VLHZ	574	3.15	VLHZ	624	4.70	VLHZ
325	4.75	VLHZ	375	4.40	VLHZ	425	3.90	VLHZ	475	4.40	VLHZ	525	3.75	VLHZ	575	5.85	LHZ	625	4.70	VLHZ
326	4.40	VLHZ	376	4.40	VLHZ	426	4.45	VLHZ	476	4.40	VLHZ	526	4.05	VLHZ	576	5.05	LHZ	626	5.10	LHZ
327	4.70	VLHZ	377	4.70	VLHZ	427	4.60	VLHZ	477	4.90	VLHZ	527	4.05	VLHZ	577	5.15	LHZ	627	4.60	VLHZ
328	4.70	VLHZ	378	4.70	VLHZ	428	3.90	VLHZ	478	4.90	VLHZ	528	3.60	VLHZ	578	5.85	LHZ	628	4.80	VLHZ
329	4.40	VLHZ	379	4.40	VLHZ	429	3.90	VLHZ	479	4.40	VLHZ	529	4.05	VLHZ	579	6.35	LHZ	629	5.15	LHZ
330	5.30	LHZ	380	5.00	LHZ	430	4.20	VLHZ	480	4.40	VLHZ	530	4.05	VLHZ	580	9.40	HHZ	630	5.85	LHZ
331	5.10	LHZ	381	4.40	VLHZ	431	4.00	VLHZ	481	5.05	LHZ	531	4.05	VLHZ	581	5.80	LHZ	631	6.85	LHZ
332	5.00	LHZ	382	4.70	VLHZ	432	4.05	VLHZ	482	4.75	VLHZ	532	5.70	LHZ	582	5.30	LHZ	632	7.25	MHZ
333	5.25	LHZ	383	5.20	LHZ	433	4.25	VLHZ	483	5.05	LHZ	533	5.20	LHZ	583	5.00	LHZ	633	7.65	MHZ
334	5.45	LHZ	384	5.20	LHZ	434	3.75	VLHZ	484	6.15	LHZ	534	5.30	LHZ	584	5.00	LHZ	634	6.95	LHZ
335	7.00	LHZ	385	4.20	VLHZ	435	4.20	VLHZ	485	6.25	LHZ	535	5.70	LHZ	585	5.00	LHZ	635	6.45	LHZ
336	9.15	HHZ	386	4.20	VLHZ	436	4.05	VLHZ	486	6.65	LHZ	536	6.40	LHZ	586	4.00	VLHZ	636	7.95	MHZ
337	8.50	HHZ	387	3.90	VLHZ	437	4.30	VLHZ	487	8.55	HHZ	537	6.80	LHZ	587	3.95	VLHZ	637	6.75	LHZ
338	5.70	LHZ	388	4.30	VLHZ	438	4.05	VLHZ	488	6.65	LHZ	538	5.60	LHZ	588	3.80	VLHZ			
339	5.95	LHZ	389	4.20	VLHZ	439	4.65	VLHZ	489	5.05	LHZ	539	6.30	LHZ	589	3.30	VLHZ			
340	5.60	LHZ	390	3.90	VLHZ	440	4.55	VLHZ	490	4.75	VLHZ	540	4.40	VLHZ	590	3.60	VLHZ			
341	5.45	LHZ	391	4.70	VLHZ	441	5.70	LHZ	491	5.05	LHZ	541	4.60	VLHZ	591	4.00	VLHZ			
342	5.40	LHZ	392	4.70	VLHZ	442	6.55	LHZ	492	3.75	VLHZ	542	4.20	VLHZ	592	3.70	VLHZ			
343	4.85	VLHZ	393	4.20	VLHZ	443	5.75	LHZ	493	4.05	VLHZ	543	4.05	VLHZ	593	3.70	VLHZ			
344	4.90	VLHZ	394	4.20	VLHZ	444	5.25	LHZ	494	4.05	VLHZ	544	4.45	VLHZ	594	3.20	VLHZ			
345	5.60	LHZ	395	4.45	VLHZ	445	5.05	LHZ	495	4.05	VLHZ	545	4.45	VLHZ	595	2.90	VLHZ			
346	6.30	LHZ	396	4.15	VLHZ	446	5.20	LHZ	496	4.05	VLHZ	546	4.40	VLHZ	596	3.10	VLHZ			
347	5.90	LHZ	397	4.05	VLHZ	447	5.20	LHZ	497	5.05	LHZ	547	4.80	VLHZ	597	3.10	VLHZ			
348	5.80	LHZ	398	3.75	VLHZ	448	5.90	LHZ	498	6.05	LHZ	548	5.10	LHZ	598	4.30	VLHZ			
349	5.40	LHZ	399	3.75	VLHZ	449	6.60	LHZ	499	7.95	MHZ	549	4.20	VLHZ	599	4.30	VLHZ			
350	6.00	LHZ	400	4.70	VLHZ	450	8.70	HHZ	500	8.55	HHZ	550	4.05	VLHZ	600	8.90	HHZ			



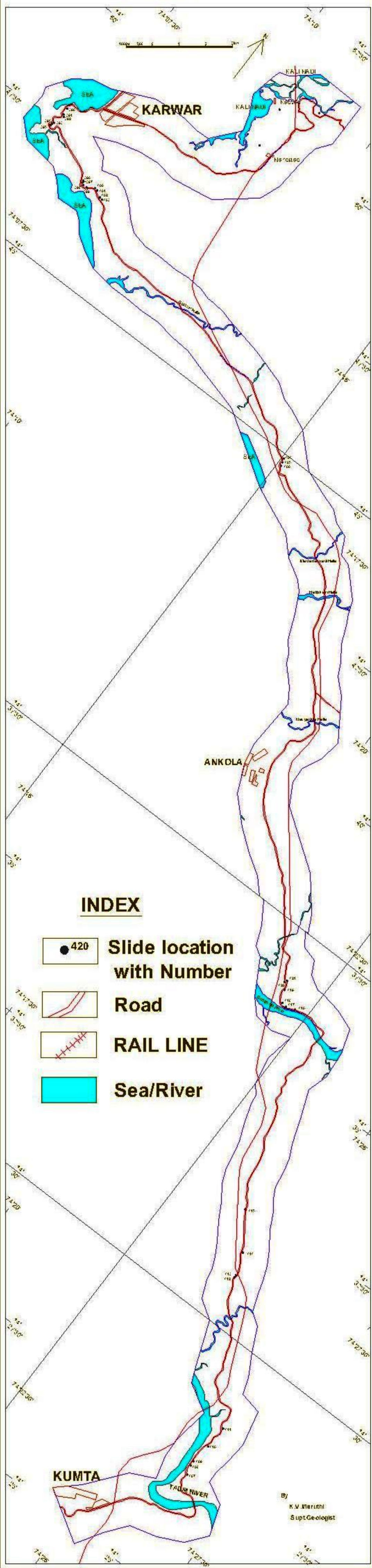
LAND SLIDE HAZARD ZONATIN MAP OF THE AREA BETWEEN KUMTA-KARWAR(UP TO MUNDRALI VILLAGE)
UTTARAKANNADA DISTRICT, KARNATAKA



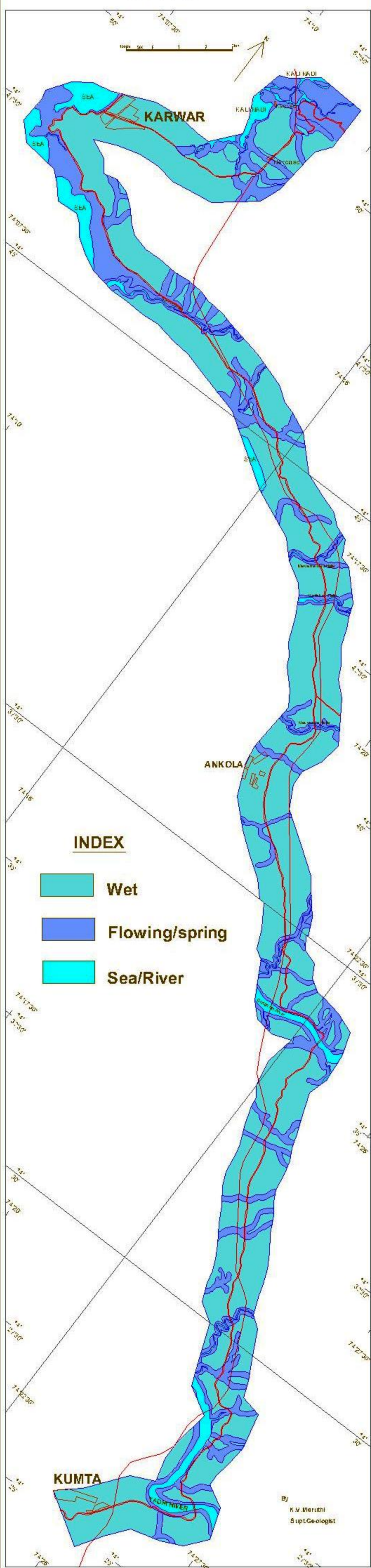
INDEX

-  Very Low Hazard
-  Low Hazard
-  Moderate Hazard
-  High Hazard
-  Very High Hazard

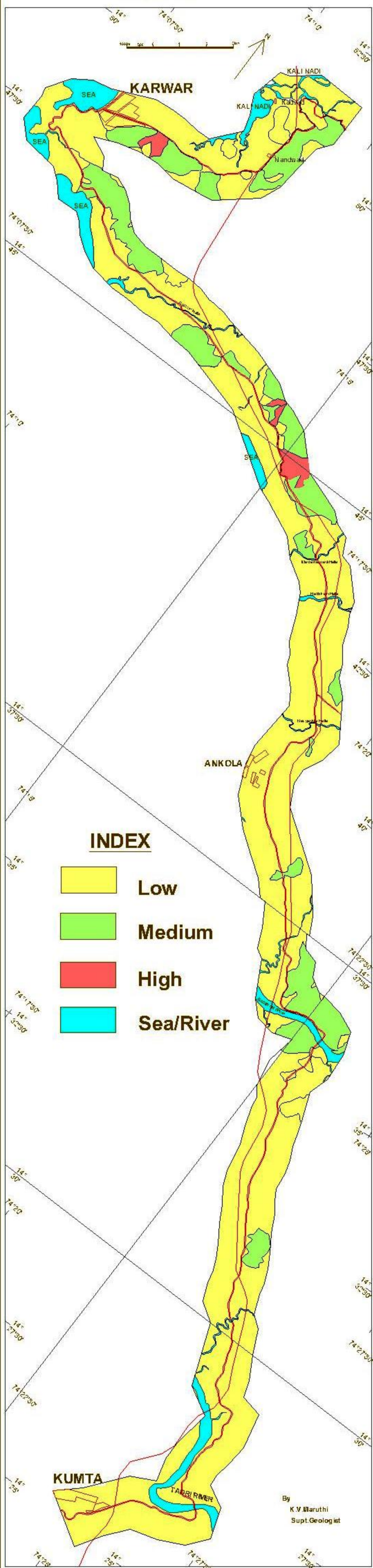
SLIDE LOCATION MAP OF THE AREA BETWEEN KUMTA-KARWAR
(UP TO MUNDRALI VILLAGE) UTTARAKANNADA DISTRICT,
KARNATAKA



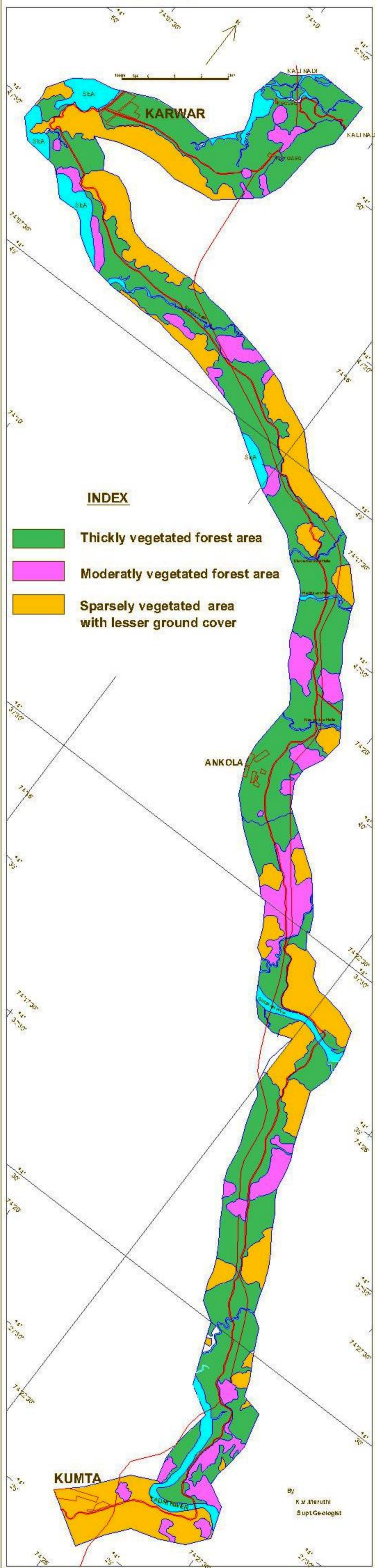
**HYDROGEOLOGY MAP OF THE AREA BETWEEN KUMTA-KARWAR
(UP TO MUNDRALI VILLAGE) UTTARAKANNADA DISTRICT,
KARNATAKA**



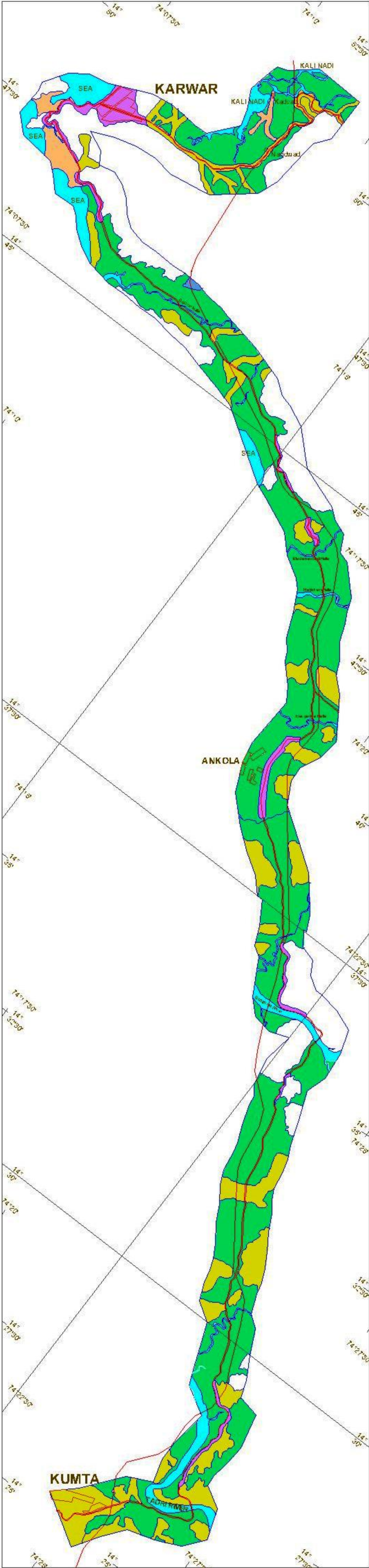
**RELATIVE RILEEF MAP OF THE AREA BETWEEN KUMTA-KARWAR
(UP TO MUNDRALI VILLAGE) UTTARAKANNADA DISTRICT,
KARNATAKA**



**LANDCOVER MAP OF THE AREA BETWEEN KUMTA-KARWAR
(UP TO MUDRALI VILLAGE) UTTARAKANNADA DISTRICT,
KARNATAKA**



LANDUSE MAP OF THE AREA BETWEEN KUMTA-KARWAR(UP TO MUNDRALI VILLAGE) UTTARAKANNADA DISTRICT, KARNATAKA

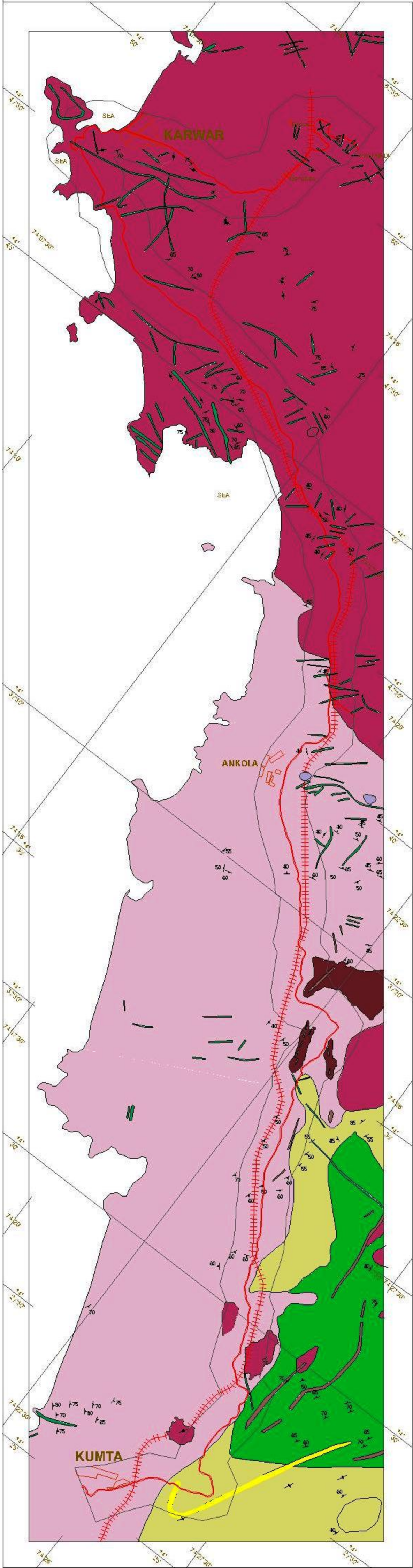


INDEX

-  Agricultural land/Populated flat land
-  Moderatly Populated slope/village roads
-  Thikly populated slope modified by large scale excavation
-  Major communication roots involving extensive slope cutting

By
K.V.Maruthi
Supt.Geologist

LITHOLOGY MAP OF BETWEEN THE KUMTA-KARWAR(UP TO MUNDRALI VILLAGE) UTTARAKANNADA DISTRICT, KARNATAKA

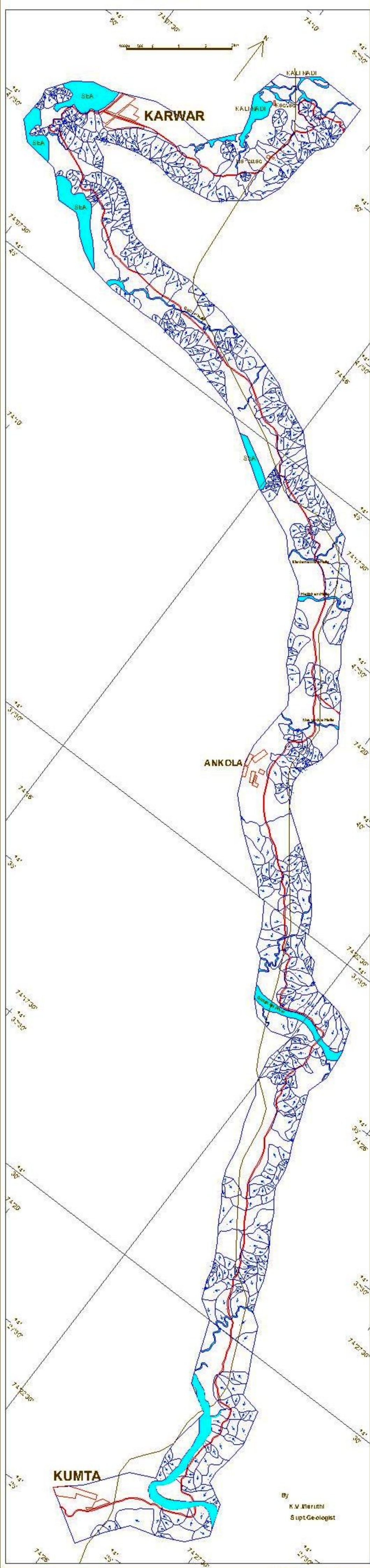


INDEX

-  Dolerite
-  Vanadiferous titanomagnetite
-  Quartzite
-  Talc-tremolite schist
-  Pyroxenite
-  Hornblende actinolite-chlorite schist
-  Granitoid (Karwar)
-  Granite gneiss
-  Amphibolite

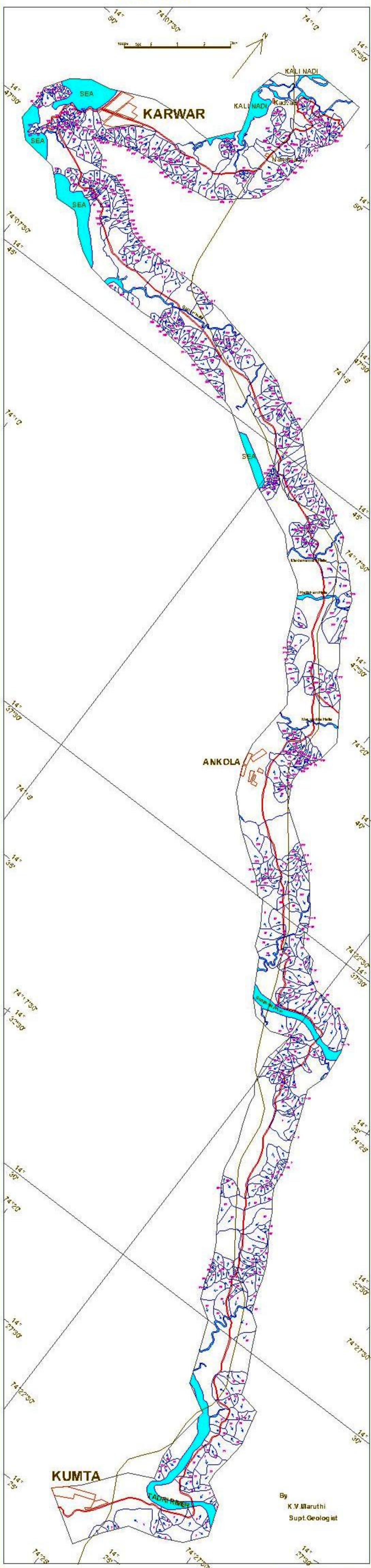
By
K.V. Meruthi
Supt Geologist

**SLOPE MORPHOMETRY MAP OF THE AREA BETWEEN KUMTA-KARWAR
(UP TO MUDRALI VILLAGE) UTTARAKANNADA DISTRICT,
KARNATAKA**



By
K.V. Maruthi
Supt Geologist

**FACET MAP OF THE AREA BETWEEN KUMTA-KARWAR
(UP TO MUNDRALI VILLAGE) UTTARAKANNADA DISTRICT,
KARNATAKA**



By
K.V. Maruthi
Supt. Geologist