



UKAI-GLHV-23-169178



# 2311, I - Cross Mahantesh Nagar, BELGAUM - 16  
e-mail : [beecube81@gmail.com](mailto:beecube81@gmail.com)  
Cell No : 99024 28248, Reg No : UD-KR-04-058972

**SOLUTIONS**

## GREEN AUDIT

This to certify that *Our Audit Team* has visited JSS's Shri Tammannappa Chikodi Arts, Commerce, BBA, BCA, B.Sc. College, P.G.& Research Centre, **Banahatti** Ta: Rabkavi-Banahatti Dist: Bagalkot 587 311 on 24<sup>th</sup> March 2023 and undertook the "GREEN AUDIT" work of college campus.

The college is located in **Banahatti**, of City Municipal Council Limits of Rabkavi-Banahatti. The population of City Municipal Council is 71,896 (2011 census). The twin cities Rabkavi-Banahatti are absolutely agriculture cum business centers, The cities are well known for textile industries. The number of saree weaving power looms are around 22,000. (highest in Karnataka) . It is also known very good quality of production of saree. (a brand name Rabkavi Banahatti Sadi) . This is mainly because of availability of skilled workers in and around Council limits of twin cities . It seems to be that, whole city is free from industrial harmful- gas effluents.

All measure are being taken to keep the campus very clean, dust free, least prone to pollutions. This is achieved by planting a number of trees in prime locations of the . Heat radiation are arrested by providing manicure lawn in prime and needy in the campus. A number of oxygen oozing plants in pots, decorative plants make the campus beautiful.


Most of the significant plants in the campus are indentified and almost all are nomenclatured.

The list is enclosed,

1. Total number of trees : : 496
2. Total number of tree species : : 72
3. Medicinal plants : : 15
4. Rare plants : : 01
5. Endangered plants : : 01
6. Oxygen oozing plants : : 15
7. Sacred plants : : 10
8. Ornamental plants : : Lot many.

"*My college My plant*" an innovative program to nourish the plants has been popularized. Staff and students have taken some plants to nourish at their own cost.

The campus is lush green and most suitable Academic developments.

  
Technical staff

  
Convener

GREEN Audit Team

Date: 24<sup>th</sup> March 2023

Place : Banahatti



## FLORA OF THE CAMPUS

S.NO	BOTANICAL NAME	Vernacular name	FAMILY	No
1	Azadirachata indica	Bevu	Melianaceae	39
2	Samania saman	Male mara	Caesalpiniodeace	3
3	Pratyclus orientalis	Mayur Parith	Cupressace	9
4	Terminalia catappa	Kadu Badam	Combretaceae	7
5	Leucanica leucocephala	Subabul	Fabaceae	34
6	Albizia lebbeck	Sirisala mar	Fabaceae	7
7	Santalum album	Shriganda	Santalaceae	6
8	Delonix regia	Sankeshwar	Caesalpinioidea	39
9	Zizyphus jujuba	Bare gida	Rhamnaaceae	6
10	Abitnlon indicum	Turube	Malvaceae	3
11	Trichosanthes dioca coccinia grandis	Tonde balli	Cucurbitaceae	8
12	Tridex procumbance	Tike kasa	Asteraceae	15
13	Acqucia julifera	Bellari jali	Mimosaceae	10
14	Calotrophis procvog	Yekke gida	Asclepiadaceae	13
15	Pongemia pinnate	Honge mara	Papilinoiaceae	38
16	Casurina equisetifolia	Gali mara	Casurinaceae	4
17	Cocos nucifera	Tengina mara	Arecaceae	5
18	Nerium oleander	Kanagila	Apocynaceae	6
19	Aloe vera	Lolesara	Liliaceae	11
20	Boerhavia diffusa	Punarnava	Nyckaginaceae	5
21	Vinca rosea	Kasikanagala	Apozynaceae	5
22	Acahypha indica	Kuppe	Euphorbiaceae	4
23	Phyllanthus niruri	Nelanelli	Euphorbiaceae	4
24	Oscimum sanctum	Tulasi	Lamiaceae	6
25	Moringa oleifera	Nugge	Moringaceae	2
26	Mangifera Indica	Mavu	Anacardiaceae	4
27	Hibiscus rosasinensis	Dasawala	Malvaceae	6
28	Eugenia jambolance	Neeralgida	Myrtaceae	3
29	Moraya koenigi	Karibhevu	Rutaceae	1
30	Jasminum sambal	Mallige	Oleaceae	2
31	Chrysanthemum indicum	Sevantige	Asteraceae	2
32	Cymbopogon citratum	Nimbe hullu	Poaceae	3
33	Annona reticubata	Ramapala	Annonaceae	3
34	Citrus lemon	Nimbe gida	Rutaceae	5
35	Tradescantia Spathacea	Tradescatia	Commelinaceae	10
36	Polyalthia longitolia	Ashok tree	Announaceae	20
37	Peltophorum ptero carpum	Tamra Shimbi	Caesalpiniodeae	3
38	Artocarpus hirsutus	Halasu	Moraceae	1
39	Hardwickia binata	Are mara	Detarioideae	3
40	Holoptelia integrifolia	Tapasi	Ulmaceae	5
41	Grevillea robusta	Charcol Tree	Proteaceae	4
42	Tamarindus indica	Hunase Mara	Caesalphenoiodege	1

*al*





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### EXTERNAL GREEN AUDIT TEAM

Our Audit Team has visited JSS's Shri Tammannappa Chikodi Arts, Commerce BBA, BCA, B.Sc. College, P.G.& Research Centre, **Banahatti** Ta: Rabakvi-Banahatti Dist: Bagalkot 587 311, on 3<sup>rd</sup> Jan 2023 and undertook the "GREEN AUDIT" work of college campus.

Team members in External GREEN Audit are

- |                          |                  |  |
|--------------------------|------------------|--|
| 1) Prof: B. B. Bavache   | Energy Auditor   |  |
| 2) Prof : L.C Horatti    | Taxonomist       |  |
| 3) Prof : S.C Changaleri | Environmentalist |  |



Convener  
Global Eco Tech & solutions  
BELGAUM



**PRINCIPAL**  
JSS, STC ARTS & COMMERCE COLLEGE  
BANHATTI-587 311





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## CARBON FOOT-PRINT OF THE INSTITUTE

( ISO 14064 )



“A carbon foot print of the Institute is the total sum of Green House Gases (GHG) emissions caused by the organization event or product”.

### INPUT DATA

- ❖ Electric energy consumed in KWh/M( avrg of last five years) = 1945 unit/month.
- ❖ No of petrol cars used staff = 01.
- ❖ No of diesel cars used staff = 01.
- ❖ No of two wheelers brought by staff and students = 18+10 =28.
- ❖ No of Electric two wheelers by staff and students = 02+2 = 4
- ❖ Diesel generator = 01.
- ❖ Omni bus = Nil
- ❖ LPG consumed in( kg) /month (staff common room) = Nil.
- ❖ LPG consumed in( kg) /month (canteen) = Nil. (out Sourced)

### CONSUMPTION RATES

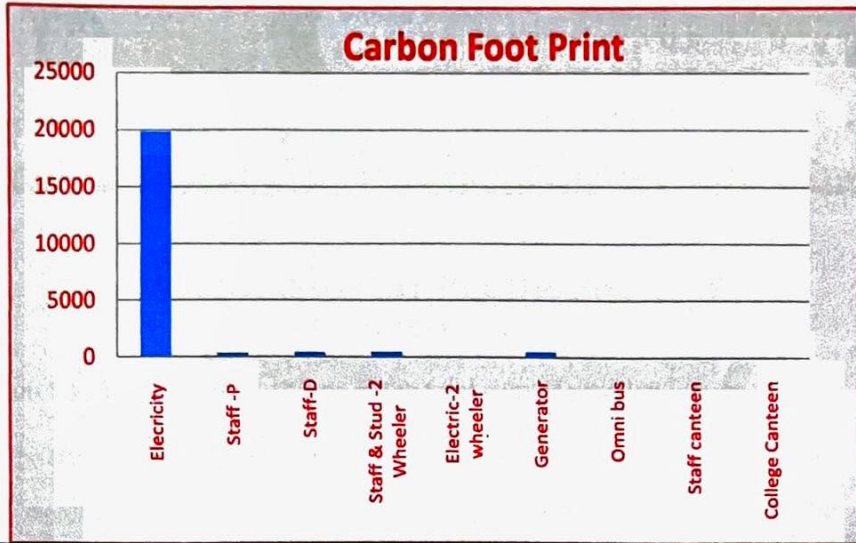
- ❖ Electric energy consumed (avrg) last five years = 1945 x12 = 23,340 units/year.
- ❖ Average petrol consumed petrol car Liter /month =12 lit /month.
- ❖ Average diesel consumed diesel l car Liter/month =12 lit /month.
- ❖ Average petrol consumed by students-two wheelers (Liter)/month =12 x2 lit /month.
- ❖ Average Electric energy required by electric two wheeler /month = 8 units /month
- ❖ Average diesel consumed for Generator = 25 lit /month.
- ❖ Average diesel consumed diesel by Omni buss = 1x (5 Liter)/day =25.00 lit /month.
- ❖ LPG consumed in( kg) /month (staff room) = 7.4 Kg /month.
- ❖ LPG consumed in( kg) /month (canteen) = 29.6 Kg /month.

### CARBON FOOT PRINT BY THE WAY OF IN KG OF CO<sub>2</sub> EQUIVALENTS

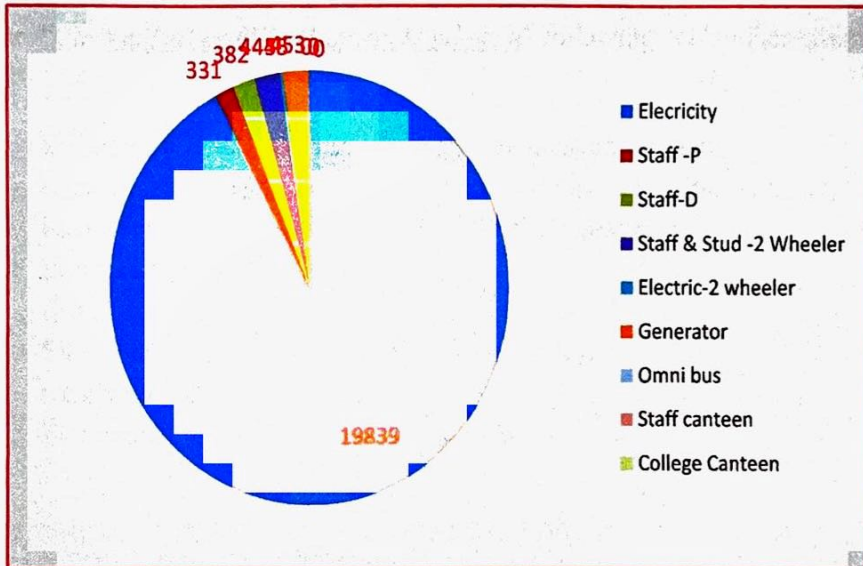
1. Electricity = 1945x12x0.85 = 19839.00
2. Petrol (staff) = 1 x 12x12 x2.296 = 330.62
3. Diesel (staff) = 1 x12 x 12 x2.653 = 382.03
4. Two wheeler Petrol (staff and students) = 28x12 x210/365 x 2.296 = 443.85
5. Electricity for charging two wheelers =8x12 x210 x 0.85/365 = 55.23
6. Diesel (Generator) = 25x8x2.653= 453.06.
7. Diesel by Omni buses = 0.00x100 x12x 2.653x210/365 = 0.00
8. LPG (staff room) =0.00x12x2.983 = 0.00
9. LPG ( Canteen) = 0.00 x12x2.983 = 0.00 (Out sourced)
10. Net Carbon foot print in ton of CO<sub>2</sub> = 21.503.79 Kg /year = **21.50 ton/year**



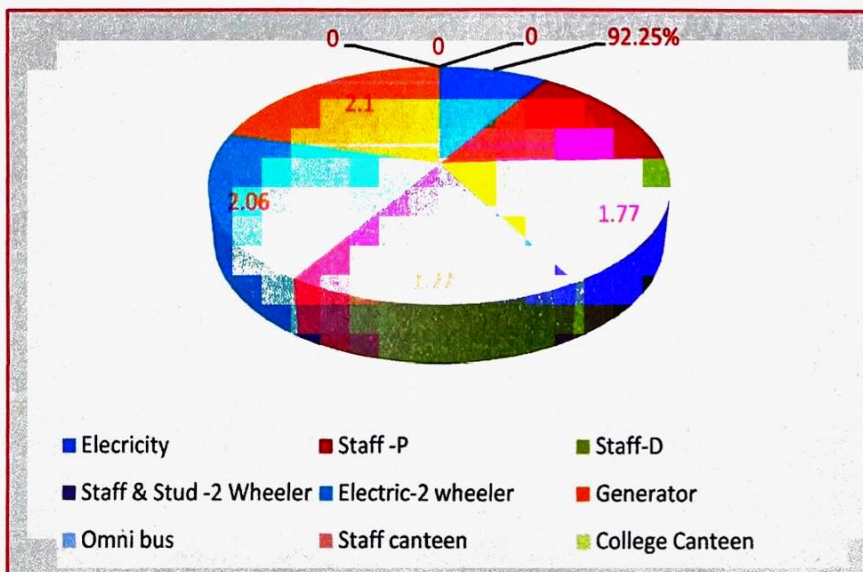
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3





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**CARBON HAND PRINT FOR THE INSTITUTE**  
( ISO 14064 )

“A Carbon Hand Print of the Institute is the total sum of positive impact produced on the environment in reducing the carbon foot print ”.



To reduce the “Carbon foot print”, “Carbon hand print” following techniques practiced

- i) Creating awareness regarding energy sensitization programs.
- ii) Creating awareness annual ‘PUC’ test of vehicles ( Pollution Under Control ).
- iii) Encouraging to purchase of BS VI certified vehicles.
- iv) Promoting electrical vehicles.
- v) Installing stand alone solar units in the campus.
- vi) Planning for roof top harvesting of solar energy.
- vii) Celebrating Green Earth day
- viii) Following Citizen Charter like Do & Don'ts

\*\*\*



*[Handwritten signature]*

**A. Energy conservation**

- I. Replacing CFL tubes and LED bulbs.
- II. Annual maintenance of Computers
- III. Replacing resistor controlled fans by electronic regulator.
- IV. Popularizing energy saving fans like BLDC fans
- V. Installing Mini Circuit Board as a local circuit breaker
- VI. Providing Stand alone solar lamps

**B. Water Conservation**

- I. Water harvesting Recharging the borer well
- II. Rain water harvesting

**C. Environment Consciousness**

- I. Maintaining The campus with carbon dioxide oxygen level below 350PPM  
(i GREEN 350 campaign)
- II. Creating awareness regarding AQI standards.

**D. Waste management**

- I. Providing drip Irrigation
- II. Providing sprinkler irrigation

**E. Hazardous waste management**

- I. Dead batteries and UPS are exchanged on by back terms and condition
- II. Segregating Dry, wet, sanitary waste and Properly channeling plastic Free Zone campus.

**F. GREEN Practices**

- I. Nomenclature of Plants
- II. Following 3R rule Reduce Reuse and Recycle
- III. Displaying Board like **Go-Green and Grow- Green**
- IV. Over all awareness of Environment consciousness
- V. Following Citizen Charter like **Dos and Don'ts**

*[Handwritten signature]*



## Important Notice

### Best Practice

#### Saving Fossil Energy for the Feline

To Bring awareness regarding the important of fossil energy for the future, Management of this college decided to "Energy Saving Day" by bringing **No Vehicle on every Thursday.**

#### Ref: Carbon foot Print

The net carbon foot print in KG equivalent of co2 is 21.50 ton every year

If no Vehicle day is celebrated, then a check ova CO2 evolution by bringing fossil energy can be achieved. This in turn bring a clean & green return in the campus

Date	KG of CO2/Year
Column 3	Staff (Petrol Car) =330.62
Column 4	Staff (Diesel Car) = 382.03
Column 5	Two wheeler =443.85
Column 6	Electrical Vehicle =55.23
	121.13 KG = 1.211 Ton

No of working day =210

No of Thursday =  $210/7 = 30$

Carbon Diaz oxide check =  $1.211/30 = 0.403$  for every Thursday

Annual  $1.211/21.50$  saving every year an integral in achieving clean Green of Campus







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## ENVIRONMENT AUDIT REPORT

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The college is located in **Banahatti**, of City Municipal Council Limits of Rabkavi-Banahatti. The population of City Municipal Council is 71,896 (2011 census). The twin cities Rabkavi-Banahatti are absolutely agriculture cum business centers. The twin cities are known for textile industries. The number of saree weaving power looms are around 22,000. (highest in Karnatak) . It is also known very good quality of production of saree. (a brand name Rabkavi Banahatti Sadi) . This is mainly because of availability of skilled workers in and around Council limits of cities .

It seems to be that, whole city is free from industrial harmful- gas effluents.

**AIRVEDA Camera Techniques Beta Attenuation Method (BAM)** has been employed to check the air quality parameters in terms of Air Quality Index (**AQI**) and audible intensity measured in decibel Bell (**dB**) by standard sensors of sound.

The details of Geographical, Environmental and Weather parameters of twin cities Ta: Rabkavi-Banahatti Dist: Bagalkot are follows.

### **GEOGRAPHICAL PARAMETERS**

1. Altitude from sea level : 542 m. (1778.302 ft)
2. Latitude: 16.477015 N.
3. Longitude: 75.125055 E.
4. Geographical location: Krishna main basin.
5. Weather Chart of Rabkvi (Ref: *Koppen Gieger Weather Chart.*) : BSh
6. Topo sheet : enclosed
7. Perennial water flow direction : Due North
8. Location : City Municipal Council Rabkavi-Banahatti.

### **PHYSICAL PARAMETERS**

9. Average Temperature : 19 to 39 Celsius.
10. UV Index : 5 to 9 normal
11. Average rainfall : 100 - 320 mm.
12. Rainy peak month : August-September
13. Average Humidity : 30 % to 65%
14. Least humid period : March to May
15. Clear Visibility : up to 7 to 10 km
16. Gust and wind velocity 10 to 30 km / h
17. Average pressure : 1006 to 1013 mb
18. Snow fall : Nil



## SUSTANABLE POLLUTION LEVELS

19. AQI level :	92	28.45	Moderate	( safe as MoEF per standards)
20. CO level:	02	251.81 $\mu\text{g m}^{-3}$	Good	( 250 $\mu\text{g m}^{-3}$ as per MoEF standards.)
21. NO <sub>x</sub> level :	03	6.59 $\mu\text{g m}^{-3}$	Good	( 80 $\mu\text{g m}^{-3}$ as per MoEF standards.)
22. O <sub>3</sub> level :	06	71.79 $\mu\text{g m}^{-3}$	Good	( 100 $\mu\text{g m}^{-3}$ as per MoEF standards.)
23. RPM :	43	41.48 $\mu\text{g m}^{-3}$	Good	( 605 $\mu\text{g m}^{-3}$ as per MoEF standards.)
24. SO <sub>x</sub> level :	06	11.28 $\mu\text{g m}^{-3}$	Good	( 50 $\mu\text{g m}^{-3}$ as per MoEF standards.)
25. SPM:	92	28.45 $\mu\text{g m}^{-3}$	Good	( 100 $\mu\text{g m}^{-3}$ as per MoEF standards)
26. Pollution levels :		Well within safe range		(as per MoEF standard)
27. dB level: 40 to 50		Better range		(as per the BIS audible standards).
28. The illumination level :		Better range		(as per BIS mark 3646 part I.)

## TYPE OF SOIL, PH, QUALITY OF WATER AND GREENARY

29. Type of soil : Gravel murum pink-red type soil with PH of soil : 7.2 to 8.6
30. Water quality : Water RO and UV filter (Report is enclosed in separate sheet)
31. Greenery in the campus : Appreciable


## MISCELLANEOUS

32. Max Hottest day 05<sup>th</sup> May every year, 12:26 PM +5.30 GMT
33. Max Humid day 07<sup>th</sup> Aug every year , 12:36 PM + 5.30 GMT
34. Distance from Equator : 1827.8 km
35. Distance from Tropic Cancer 773.63 km
36. Electromagnetic Radiation < 40  $\mu\text{T}$  (safe as per the BIS standards).

All Environmental related charts and their importance are submitted to the college.



Technical staff



Convener

Environment Audit Team

Date :24<sup>th</sup> March 2023

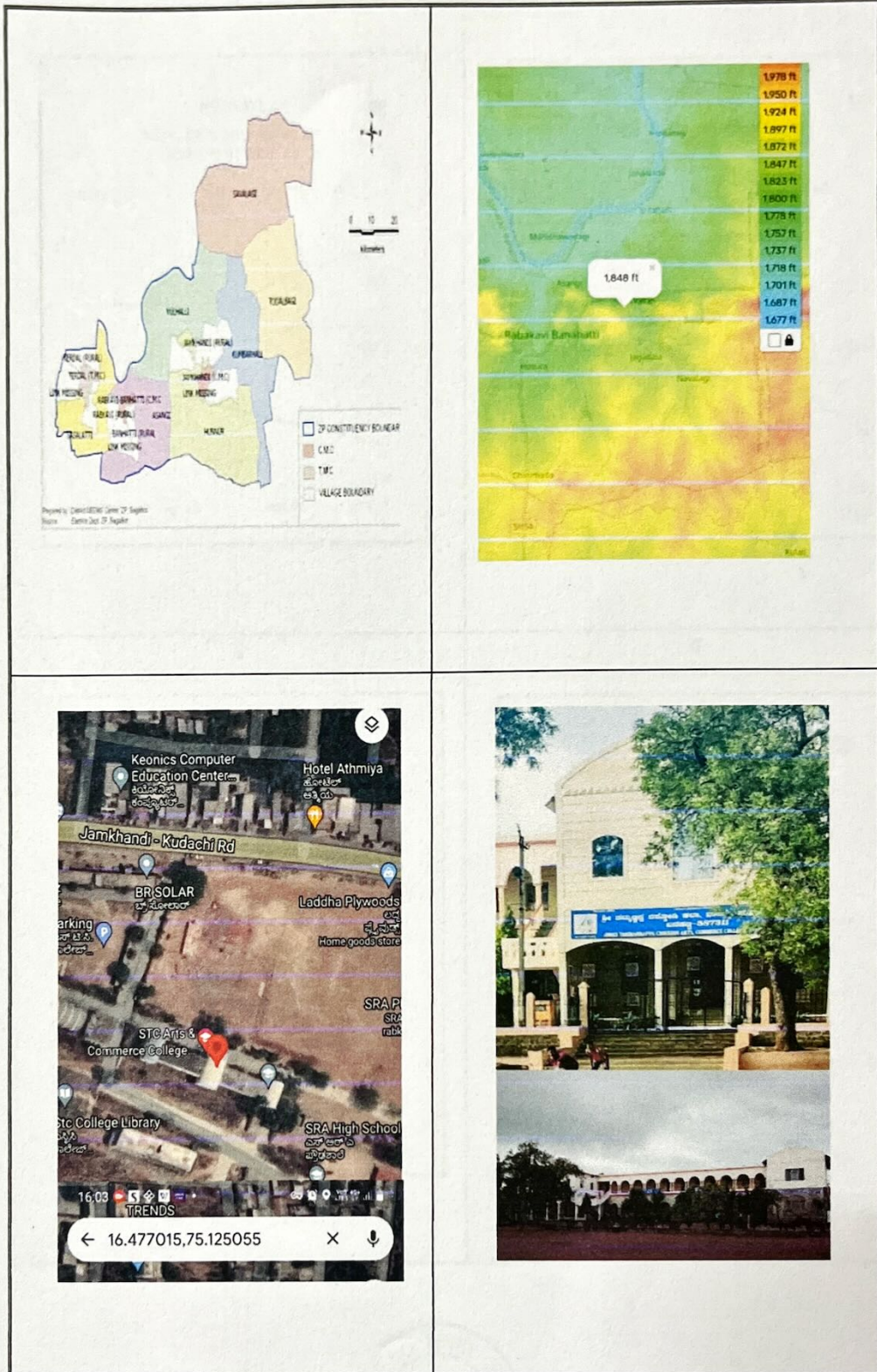
Place :Banahatti

JS Sangha's

# Shri Tammamappa Chikodi College of Arts and Commerce, BANAHATTI

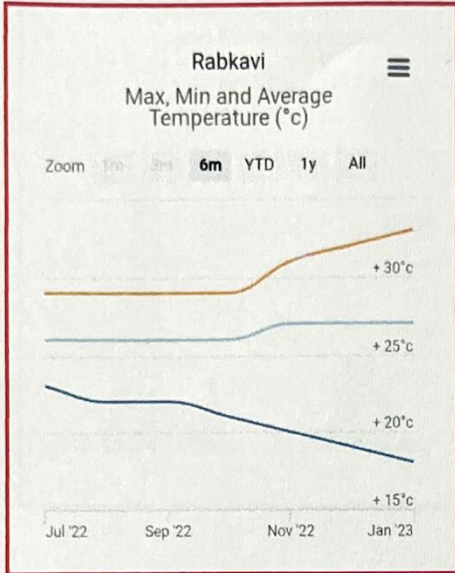
587 311

Ta: Rabkavi-Banahatti , Dist: Bagalkot

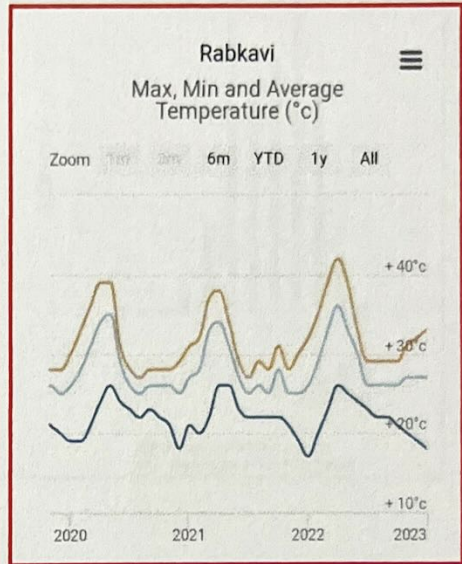


## Environmental Parameters

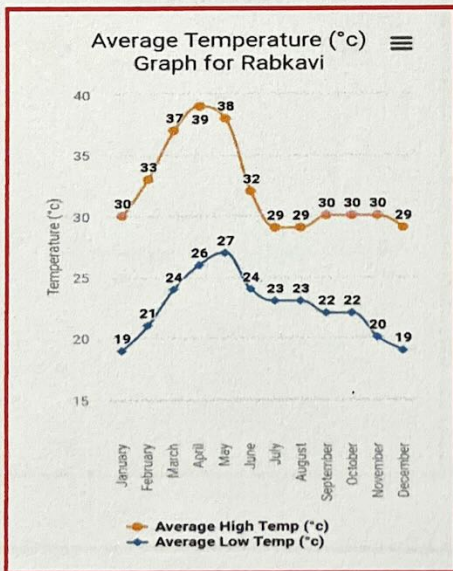
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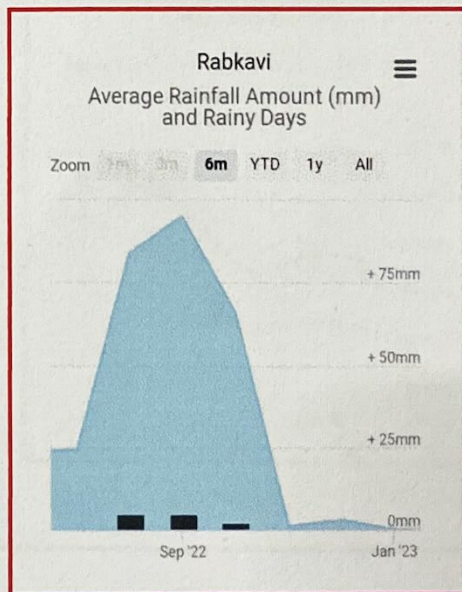
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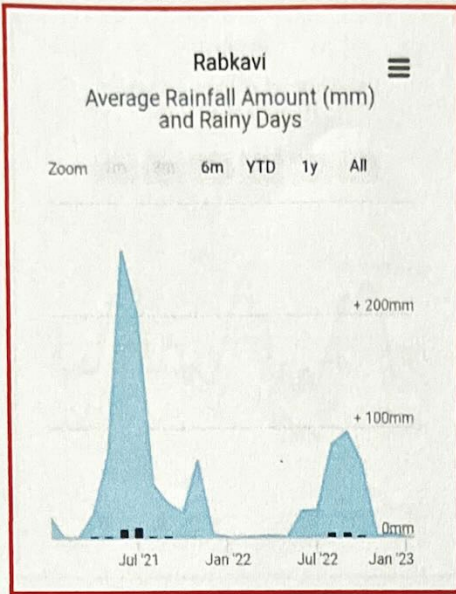
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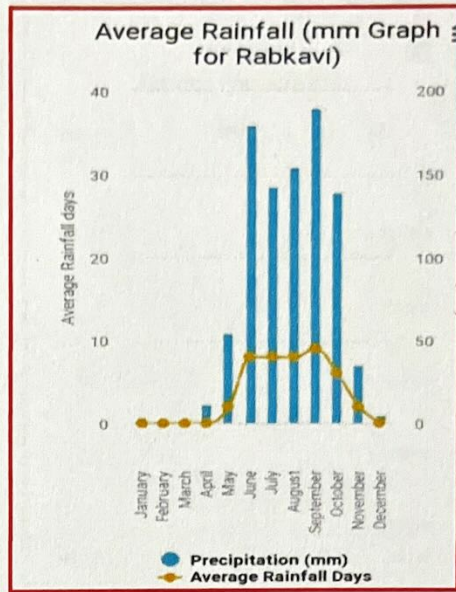
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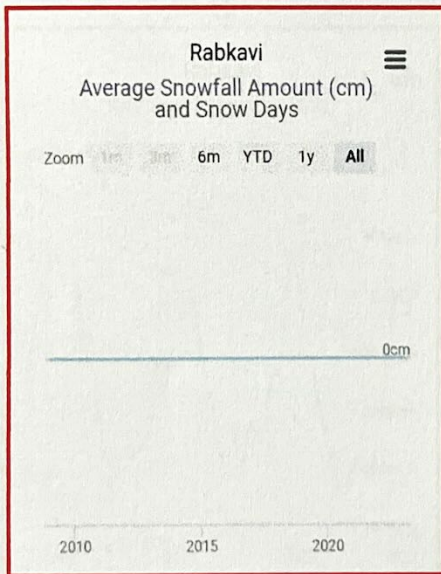
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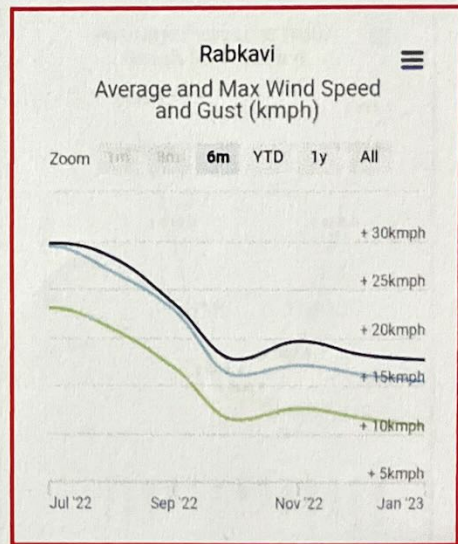
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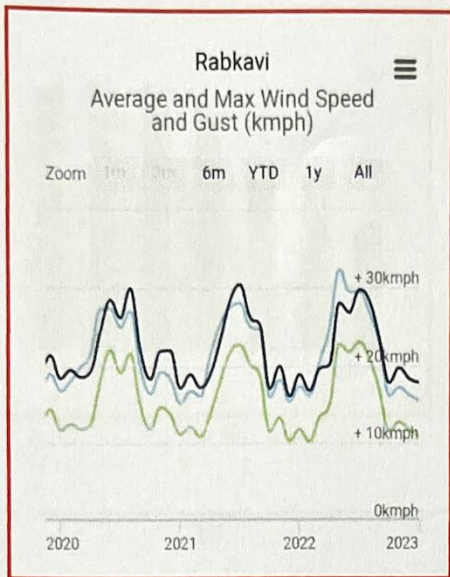
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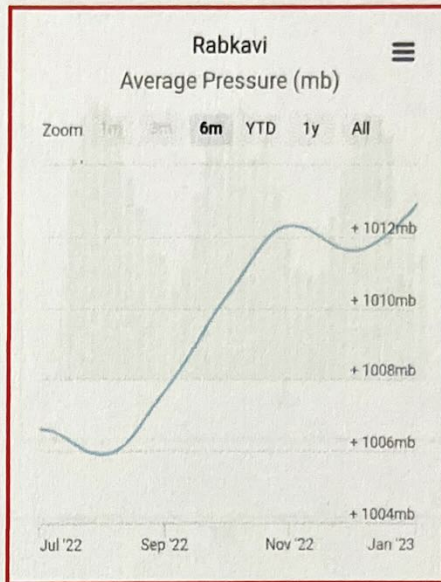
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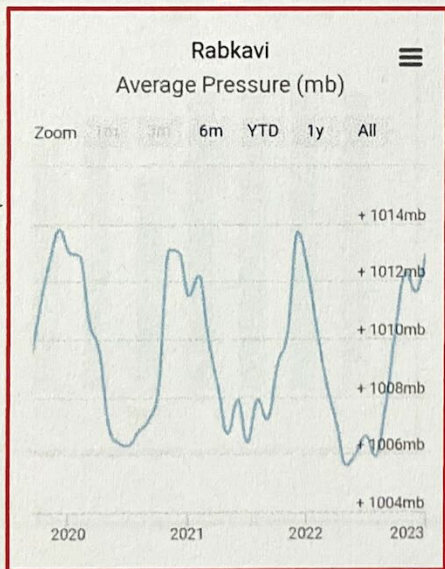
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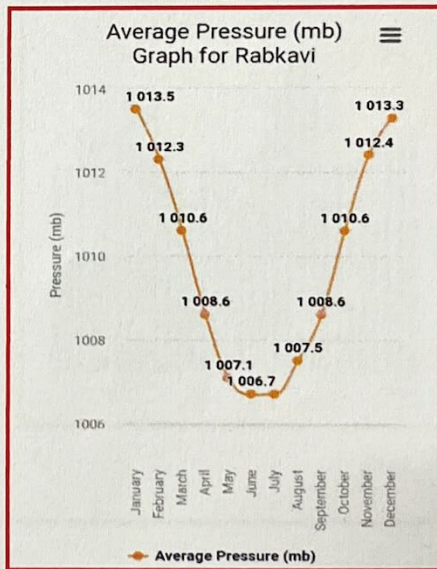
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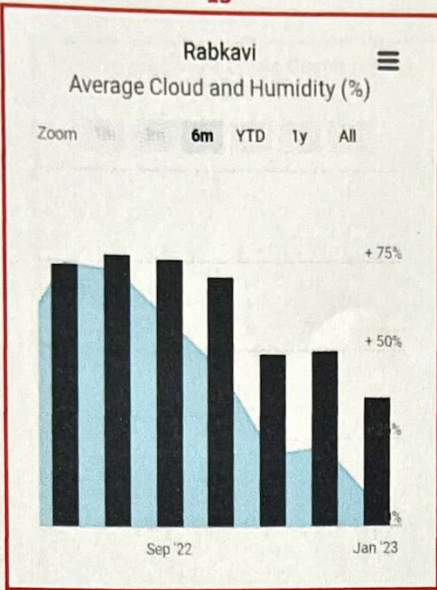
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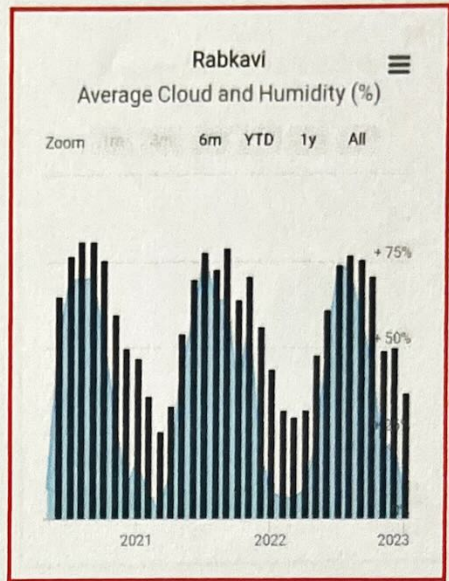
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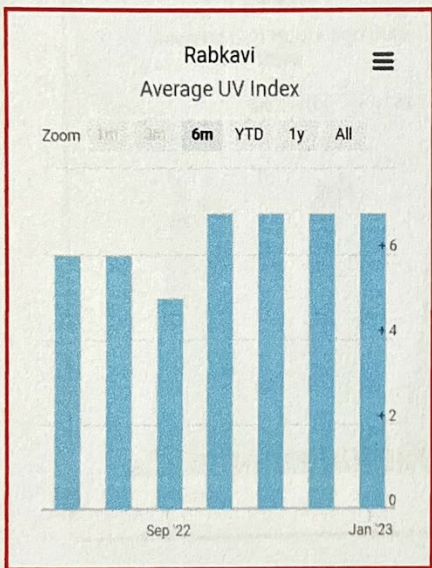
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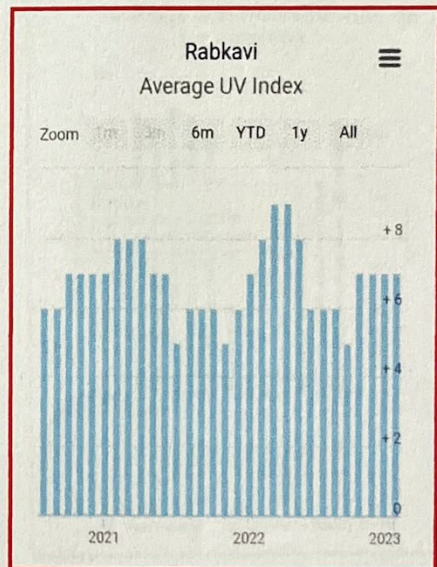
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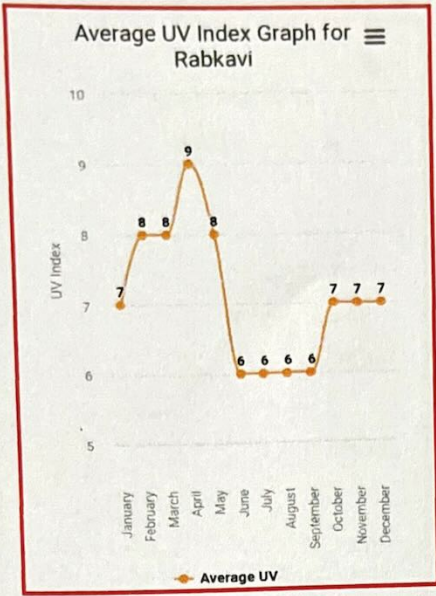
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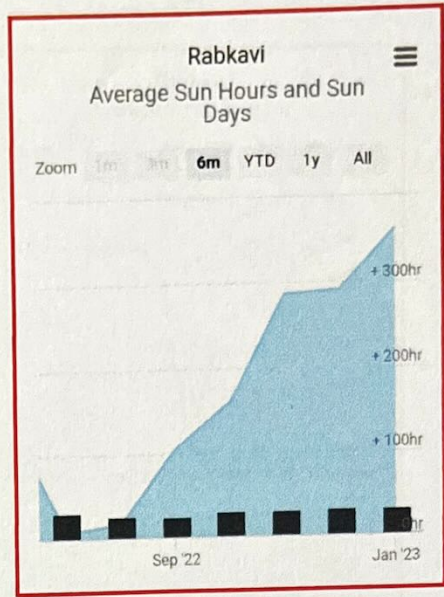
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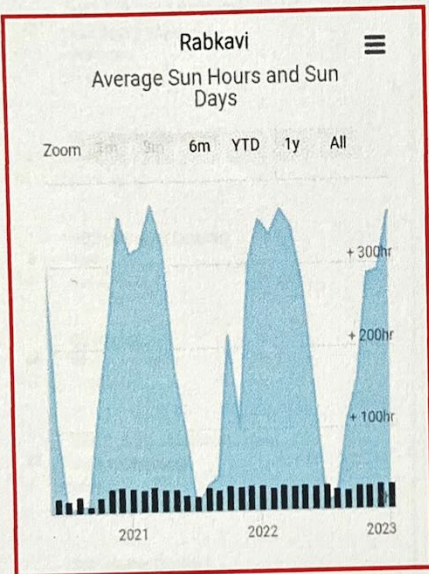
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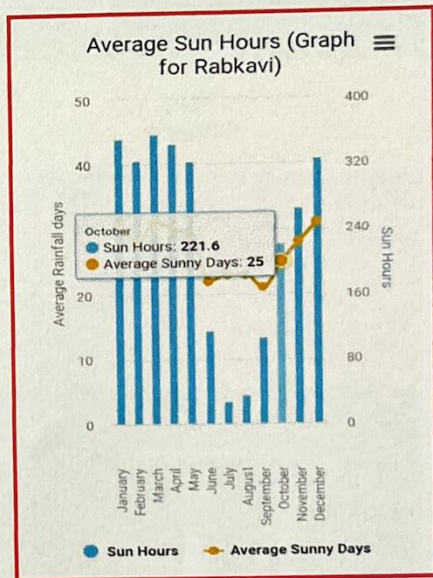
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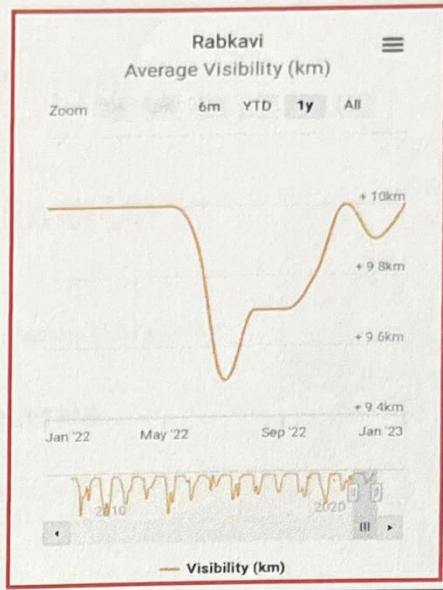




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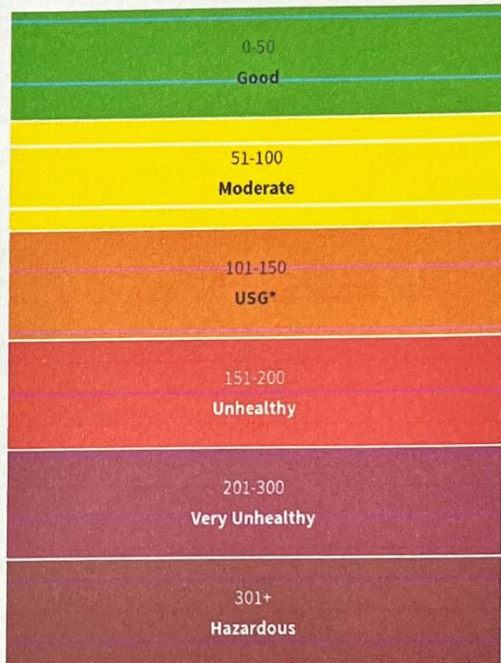
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All Pollutants

- 92** PM2.5 (Particulate matter less than 2.5 microns)  
Moderate  
28.45 µg/m3
- 2** CO (Carbon Monoxide)  
Good  
258.81 µg/m3
- 3** NO2 (Nitrogen Dioxide)  
Good  
6.69 µg/m3
- 46** O3 (Ozone)  
Good  
71.92 µg/m3
- 43** PM10 (Particulate matter less than 10 microns)  
Good  
41.48 µg/m3
- 6** SO2 (Sulfur Dioxide)  
Good  
11.28 µg/m3

Pollution Level

24



\*Unhealthy for Sensitive Groups

AQI Level



**AIR QUALITY INDEX**  
**@**  
**RABKAVI -BANHATTI**

**Today's Air Quality** - Rabkavi, Karnataka, India

**92**

**Moderate**

Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.



*Qub*