

# VIDYA BHARATI MAHAVIDYALAYA AMRAVATI

Re-accredited "A" Grade by NAAC with CGPA 3.26

College with Potential for Excellence (CPE) Status by UGC

Star College Status by Department of Biotechnology, New Delhi

Affiliated to Sant Gadge Baba Amravati University, Amravati



## GREEN & ENVIRONMENT AUDIT REPORT 2016-2017

Prepared by

Mountain Watercare Technologies, Pune

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**Green and Environment Audit, VBMV, Amravati**



**MOUNTAIN WATERCARE TECHNOLOGIES**  
Assuring Quality Water

Registration No. Pimpri/II/53363

Date, 27/04/2017

To,  
Principal,  
Vidya Bharati Mahavidyalaya,  
Camp, Amravati

It is to certify that we Mountain Watercare Technologies Consultancy, Pune conducted "Green & Environment Audit" of the campus of Vidya Bharati Mahavidyalaya, Amravati for the Academic Year 2016-2017.



*Kishan M. Jagtap*  
(Kishan M. Jagtap)

### I. Introduction

Our green planet is at risk now. Humans polluted water, soil and air and exhausted natural resources. We must open our eyes and face the problems we created. Industrial development affected greatly on the environment. The more conveniences we have, the more pollution people produce. Environment contamination influences on climate change. Climate changes more rapidly than a century ago. Industrial progress is subject to weather change. Horrible hurricanes, floods and droughts are the outcomes of climate change. Many countries suffer all these natural calamities in the recent years. People spend lots of time and money covering the expenses of these catastrophes every year. Nature warns us of its desperate situation and demonstrates it in frequent natural hazards.

Global warming is another manifestation of natural imbalance. We witness greenhouse effect, when greenhouse gases increase and affect the temperature rise. It influences the rise of World Ocean level and Arctic ice melting. The scientists have calculated that over several decades coastal countries and some islands can be engulfed by water. Carbon dioxide is the main greenhouse gas that works as a sheet not allowing the heat from the Earth to come out. With the growth of population, people need more space and resources to meet all their requirements in food and shelter. People started to cut down forests to increase area for pastures and agricultural fields. Forests are the main lungs of the Earth and the main environment for a great variety of animals, birds and insects. A lot of forest species are in danger due to human activities and deforestation. The developing countries skim off their natural resources and do not care about nature protection. Meantime developed countries pollute environment with urban pollution and industrial wastes.

Overpopulation is a great concern in many countries. We exploit natural resources on the consume basis and do not think of future outcomes that may occur in the nearest future. Overpopulation results in gender imbalance, nature pollution, overproduction and urban sprawling. Countries try to cope with this problem on the governmental level but such policies seem to be ineffective in such countries as India and China. The recent industrial development of these countries and life improvement resulted in overpopulation. Increased population consume more products and produce

## **Green and Environment Audit, VBMV, Amravati**

tons of garbage. Unfortunately, people forget that we are the integral part of nature. We must live in balance with environment and care for it. Though we produce many environments issues humans try to redeem resources used. We must reconsider our consuming attitude to nature. People must be aware that nature is at the edge of the catastrophe. People realize that they are not the ultimate users of nature and build environmentally friendly houses. We must share this world with plants and animals. What is done cannot be undone. We must think of future generation and what will be left after us. People find solutions to environmental problems. We recycle rubbish, invent battery cars and limit air, water and soil pollution, plant new trees on the land erosion. But that is not enough, people have to change their lifestyle radically until nature took last extreme measures.

To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, water harvesting etc. Educational institutions must play an active role in creating and modelling solution for such environmental problems. "Green audit" is one such concept or principle introduced to make the educational institute environmentally sustainable. Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self enquiry is a natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

**II. Objectives**

Vidya Bharati Mahavidyalaya is one of the reputed educational institutes in Sant Gadge Baba Amravati University, Amravati. Performing environmental and green audit is one of the efforts towards the self-assessment of the college which reflect the role of college in justifying the present environmental problems. The college with in collaboration with Mountain Watercare Technology, Consultancy has being putting hard work to conducting environmental and green audit of campus.

The main objectives of carrying out Green Audit are:

- ✓ To map the Geographical Location of the college
- ✓ To study the floral and faunal diversity of the college
- ✓ To record the meteorological parameter of Amravati city where college is located
- ✓ To document the ambient environmental condition of weather, air, water and noise of the college
- ✓ To document the waste disposal system

**III. Methodology**

The purpose of the green audit of Vidya Bharati Mahavidyalaya is to ensure that the practices followed and conducted in the campus are in accordance with the Green Policy adopted by the institution. The methodology include: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. Some data have also been taken from the students volunteer by various departments of the college. College green audit divided in two parts first Green Audit and second Environment Audit. Green Audit includes issues like mapping, floral and faunal diversity, weather report, solid waste, and energy audit. Environment Audit includes the air, noise and water quality.

**IV. About the College**

Vidya Bharati Mahavidyalaya one of the foremost educational institutions of Vidarbha, was established in 1972 first as a Science College at the graduate and Junior College levels. Later it blossomed into a multi-faculty institution with Arts, Commerce, Management and Cosmetic Technology. The College offers courses from the Junior College level, through Graduation and Post-graduation to Research for PhD in all the faculties.

The institution has well-equipped laboratories, ample computer and internet facilities, an excellent library, an immense playground with a Sports Complex, a well-equipped Gymnasium, a state-of-the-art AV Theatre, an Astronomy Club and two Girls' Hostel in the campus itself. These facilities along with exemplary teaching staff have taken the results of the college to greater heights of glory with each passing year. Student achievers in the fields of Academics and Sports and Cultural activities are felicitated every year by the College with prizes, certificates, mementoes and track suits.

On 5<sup>th</sup> January 2013, the College was re-accredited by NAAC, Bangalore with Grade 'A' and a CGPA of 3.26, the highest till date among all the colleges in the four Universities of Vidarbha. The College was also awarded the Star College status by the Department of Biotechnology, New Delhi. It was also accorded College with Potential for Excellence (CPE) status by the UGC, New Delhi for the second time. The College has significant representation of teachers in the University, with 02 members as Deans of the Faculties of Science and Commerce and 12 members on the different Boards of Studies. Researches being a major activity, the faculty members have 05 Major and 30 Minor UGC-approved Projects to their credit.



## **Green and Environment Audit, VBMV, Amravati**

### **Mission**

Committed to the creation of a self-reliant centre of excellence that imparts knowledge and develops the right values, attitudes and skill stressing quality consciousness, to produce ideal citizens who can contribute their mite to nation-building.

### **Vision**

Holistic development of the students into a responsible, morally upright citizen capable of thinking, learning and striving for national development.

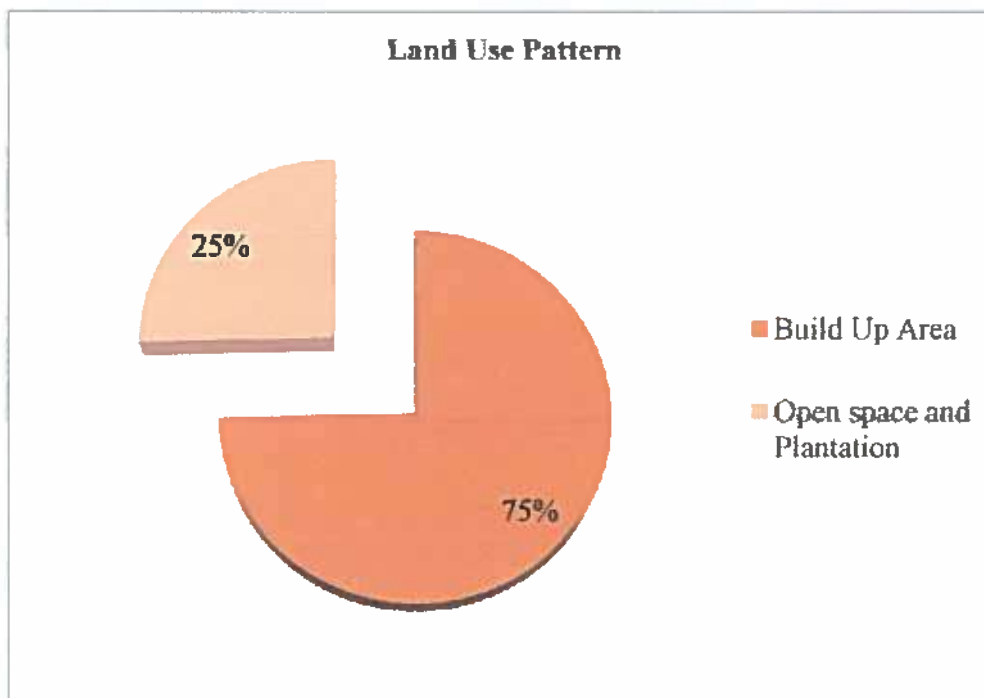


**General Overview of the Concept of Landuse**

Vidya Bharati Mahavidyalay is within the geo-position between latitude 20<sup>o</sup>56' N and longitude 77<sup>o</sup>46' E in Amravati, Maharashtra, India. It encompasses an area of about 28881.16 sqmeter. The college has following land use pattern:

| <b>Categories of Land Use</b> | <b>Area in sqm</b> |
|-------------------------------|--------------------|
| Build Up Area                 | 21542.09           |
| Open space and Plantation     | 7339.07            |
| Total Area                    | 28881.16           |

The total area of Vidya Bharati Mahavidyalaya is 28881.16 sqm out of which the build up area 74.58 % (i.e. 21542.09 sqm) and open space and plantation area is 25.41% (i.e. 7339.07 sqm).

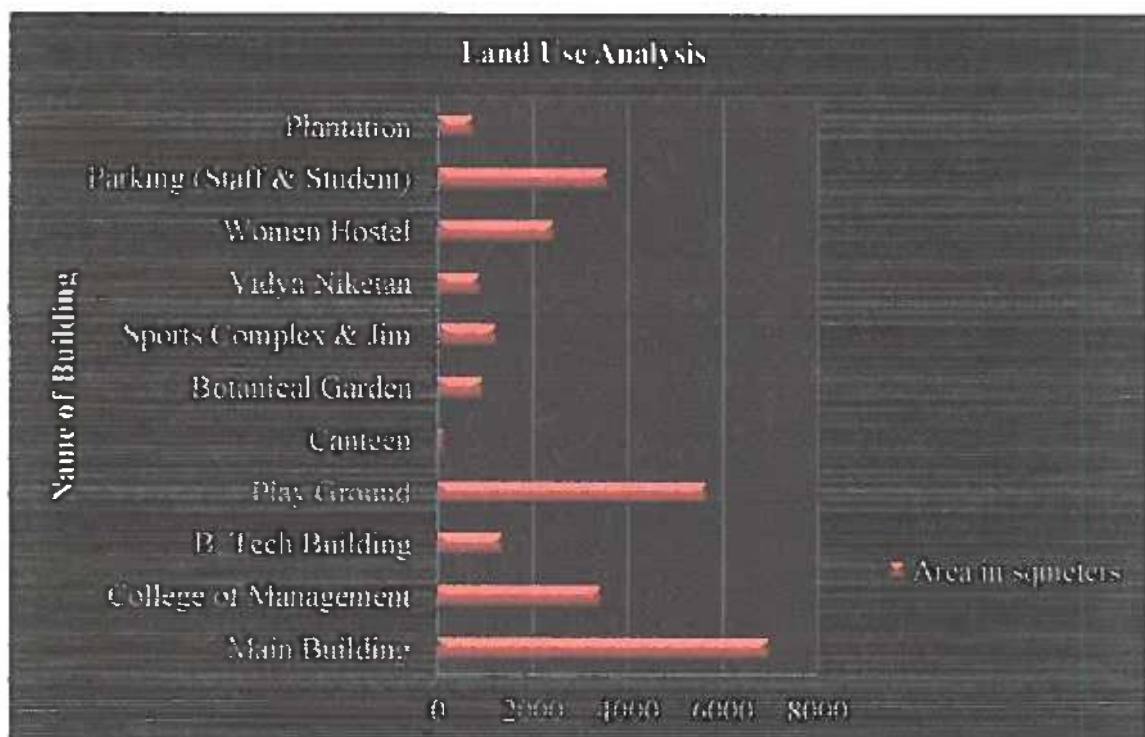


## Green and Environment Audit, VBMV, Amravati

### Land Use Analysis

Following are the land use analysis of Vidya Bharati Mahavidyalaya:

| Category of Land Use      | Area in sqmeters |
|---------------------------|------------------|
| Main Building             | 7007             |
| College of Management     | 3472             |
| B. Tech Building          | 1370             |
| Play Ground               | 5665             |
| Canteen area              | 147              |
| Botanical Garden          | 963.17           |
| Sports Complex & Jim      | 1234             |
| Vidya Niketan             | 911              |
| Women Hostel              | 2457             |
| Parking (Staff & Student) | 3579.62          |
| Plantation                | 777.57           |



## GREEN AUDIT

### VI. Floral Diversity of VBMV, Amravati, Maharashtra

Vidya Bharati Mahavidyalaya is within the geo-position between latitude 20°56' N and longitude 77°46' E in Amravati, Maharashtra, India. It encompasses an area of about 28881.16 sqmeter. The area is immensely diverse with a variety of tree species performing a variety of functions. Most of these tree species are planted in different periods of time through various plantation programmes organised by the authority and have become an integral part of the college. Many spices of birds are dependent on these trees mainly for food and shelter. Nectar of flowers and plants is a favourite of birds and many insects. Leaf – covered branches keep many animals, such as birds and squirrels, out of reach of predators. Different species display a seemingly endless variety of shapes, forms, texture and vibrant colours. Even individual trees vary their appearance throughout the course of the year as the seasons change. The strength, long lifespan and regal stature of trees give them a monument – like quality. A thick belt of large shady trees in the periphery of the college have found to be bringing down noise and cut down dust and storms. The following are the tree species with whom we are being attached-

#### List of Tree Species of VBMV, Amravati, Maharashtra

| Sr. No. | Botanical Name  | Family         |
|---------|---|----------------|
| 1       | <i>Zinnia angustifolia</i> kunth.                       | Asteraceae     |
| 2       | <i>Blainvillea acmella</i> L.                           | Amaranthaceae  |
| 3       | <i>Aerva Lanata</i> ( L.) Juss.                         | Amaranthaceae  |
| 4       | <i>Achyranthus aspera</i> L.                            | Amaranthaceae  |
| 5       | <i>Amaranthus polygonides</i> L.                        | Amaranthaceae  |
| 6       | <i>Andrographis paniculata</i> (Burm.f.)Wall<br>ex Ness | Acanthaceae    |
| 7       | <i>Diplocyclous palmatus</i> L.                         | Cucurbitaceae  |
| 8       | <i>Cocculus hirsutus</i> ( L.) Deils                    | Menisparnaceae |
| 9       | <i>Oxalis corniculata</i> L.                            | Oxalideaceae   |
| 10      | <i>Colocasia esculanta</i> (L.) Schott                  | Araceae        |

**Green and Environment Audit, VBMV, Amravati**

|    |  |                 |
|----|--|-----------------|
| 11 | <i>Ocimum sanctum L.</i>                                 | Lamiaceae       |
| 12 | <i>Catharanthus roseus (L.)</i>                          | Apocynaceae     |
| 13 | <i>Datura metal L.</i>                                   | Solanaceae      |
| 14 | <i>Withania somnifera (L) Dunal.</i>                     | Solanaceae      |
| 15 | <i>Acalypha indica L.</i>                                | Euphorbiaceae   |
| 16 | <i>Curcuma longa L.</i>                                  | Zingiberaceae   |
| 17 | <i>Zingiber officinale Rose.</i>                         | Zingiberaceae   |
| 18 | <i>Ipomoea cairica (L.) Sweet.</i>                       | Convolvulaceae  |
| 19 | <i>Passiflora edulis Sims.</i>                           | Passifloraceae  |
| 20 | <i>Aloe vera L.</i>                                      | Liliaceae       |
| 21 | <i>Asparagus racemosus (L.) Willd.</i>                   | Liliaceae       |
| 22 | <i>Cissus quadrangularis L.</i>                          | Vitaceae        |
| 23 | <i>Agave americana (L.)A.L.Juss. ex Schutt</i>           | Agavaceae       |
| 24 | <i>Hymenocallis littoralis (Jacq.)</i>                   | Amaryllidaceae  |
| 25 | <i>Jasminum auriculatum Roxb.</i>                        | Oleaceae        |
| 26 | <i>Dianthus chinensis L.</i>                             | Caryophyllaceae |
| 27 | <i>Trigonella foenumgraecum L.</i>                       | Fabaceae        |
| 28 | <i>Cynodon dactylon (L.)Pers</i>                         | Poaceae         |
| 29 | <i>Dicanthium annulatum (Hook.f.) Blatt. &amp; Mc C.</i> | Poaceae         |
| 30 | <i>Lophopogon tridentatus Hack.</i>                      | Poaceae         |
| 31 | <i>Andropogon pumilus Roxb.</i>                          | Poaceae         |
| 32 | <i>Aristida hystrix L.F.</i>                             | Poaceae         |
| 33 | <i>Chloris virgata Swartz.</i>                           | Poaceae         |
| 34 | <i>Dactyloctenium aegyptium ( L) P.Beauv.</i>            | Poaceae         |
| 35 | <i>Eleusine indica(L.)Gaertn.</i>                        | Poaceae         |
| 36 | <i>Setaria pumilla (poir)R.</i>                          | Poaceae         |
| 37 | <i>Melanocenchris jacquemontii Jaub.and Spach.</i>       | Poaceae         |
| 38 | <i>Alpuda mutica</i>                                     | Poaceae         |
| 39 | <i>Eragrostis namaquensis</i>                            | Poaceae         |
| 40 | <i>Eragrostis tanella</i>                                | Poaceae         |
|    | <i>Hibiscus rosa-sinensis L.</i>                         | Malvaceae       |

|    |   |                |
|----|---|----------------|
| 42 | <i>Abelmoschus moschatus L.</i>                     | Malvaceae      |
| 43 | <i>Lawsonia inermis L.</i>                          | Lithraceae     |
| 44 | <i>Murraya koenigii (L.) Spr.</i>                   | Rutaceae       |
| 45 | <i>Citrus aurantifolia (Christm.) Sw.</i>           | Rutaceae       |
| 46 | <i>Hamelia patens Jacq.</i>                         | Rubiaceae      |
| 47 | <i>Ixora coccinea L.</i>                            | Rubiaceae      |
| 48 | <i>Coffea arabica Ritter Ron.</i>                   | Rubiaceae      |
| 49 | <i>Nyctanthes arbortristis L.</i>                   | Oleaceae       |
| 50 | <i>Nerium oleander L.</i>                           | Apocynaceae    |
| 51 | <i>Tabernaemontana divaricata (L.) R. Br.</i>       | Apocynaceae    |
| 52 | <i>Calotropis procera (Ait) R. Br.</i>              | Asclepiadaceae |
| 53 | <i>Solanum nigrum L.</i>                            | Solanaceae     |
| 54 | <i>Barleria cristata L. var. cristata</i>           | Acanthaceae    |
| 55 | <i>Adhatoda beddomei Hong Gao</i>                   | Acanthaceae    |
| 56 | <i>Vitex trifolia L.</i>                            | Verbenaceae    |
| 57 | <i>Lantana camara L. var. aculeata(L.)<br/>Mold</i> | Verbenaceae    |
| 58 | <i>Jatropha curcas L.</i>                           | Euphorbiaceae  |
| 59 | <i>Azardirecta indica A. Juss.</i>                  | Meliaceae      |
| 60 | <i>Ficus benghalensis L.</i>                        | Moraceae       |
| 61 | <i>Ficus religiosa L.</i>                           | Moraceae       |
| 62 | <i>Ficus glomerata Roxb.</i>                        | Moraceae       |
| 63 | <i>Aegle marmelos (L.) Corr.</i>                    | Rutaceae       |
| 64 | <i>Feronia limonia L.</i>                           | Rutaceae       |
| 65 | <i>Mangifera indica L.</i>                          | Anacardiaceae  |
| 66 | <i>Emblica officinalis Gaertn.</i>                  | Euphorbiaceae  |
| 67 | <i>Psidium guajava L.</i>                           | Myrtaceae      |
| 68 | <i>Santalum album L.</i>                            | Santalaceae    |
| 69 | <i>Tectona grandis L. f.</i>                        | Verbenaceae    |
| 70 | <i>Cocos nucifera Linn.</i>                         | Arecaceae      |
| 71 | <i>Ziziphus mauritiana L.</i>                       | Rhamnaceae     |
| 72 | <i>Butea monosperma (Lam.) Taub.</i>                | Fabaceae       |

**Tectona grandis**



**Phyllanthus emblica,**



**Butea monosperma**





**Aegle marmelos**



**Ficus religiosa**



**Ficus benghalensis**



**Mangifera indica**



**Azadirachta indica**



**VII. Faunal Diversity of VBMV, Amravati, Maharashtra**

The green cover and availability of ample food and water in Vidya Bharati Mahavidyalaya campus is very suitable for a different faunal species. The campus is working as a habitat for different faunal species. Spiders, Moths and Butterflies, Insect, Amphibians, Reptiles, Birds, Mammals of campus were studied by consulting agency. Biodiversity present in campus shows eco friendly association of plant, animals and human being.

The faunal Diversity of Vidya Bharati Mahavidyalaya campus has been studied and documented as below-

**FAUNAL GROUP**

**SCIENTIFIC NAMES**

**SPIDERS**

Myrmachne orientalis (Family Salticidae);  
Nephila plipes (Family-Nephilidae); Heteropoda  
sp (Family-Sparassidae); Phintella vitatta  
(Family Salticidae)

**MOTHS & BUTTERFLIES**

Antheria assmensis; Bombyx mori; Junonia  
atlites atlites; Ethope himachala ; Ypthima  
baldus ; Acraca terpsicore ; Elymnias  
hypermnestra undularis ; Mycalesis perseus  
blasius ; Tanaecia lepidea lepidae ; Monarch  
butterfly

**OTHER INSECTS**

Apis indica; Apis dorsata; Apis florea,  
Crocothemis erythraea (Scarlet dragonfly);  
Pantala flavescens (wandering glider); Orange  
Blister Beetle; Diplacodes trivialis

**AMPHIBIANS**

*Duttaphrynus melanostictus* (Asian common toad), *Leptobrachium smithi*; *Fejervarya pierrei*; *Hoplobatrachus tigerinus*; *Hylarana tytleri*; *Humerana humeralis*; *Hylarana leptoglossa*; *Polypedates leucomystax*.

**REPTILES**

*Calotes versicolor*; *Hemidactylus frenatus*; *Hemidactylus brookii*; *Hemidactylus platyurus*; *Hemidactylus flaviviridis*; *Xenochrophis schnurrenbergeri*; *Xenochrophis cerasogaster*; *Rhabdophis subminiatus*; *Amphiesma stolatum*; *Chrysopelea ornate*

**BIRDS**

*Acridotheres tristis* (Common myna); *Athene noctua* (little owl); *Pycnonotus cafer* (Redvented Bulbul); *Corvus culminatus*

**MAMMALS**

*Macaca mulatta* (The rhesus macaque); *Sciurus carolinensis* (Eastern gray squirrel); *Pteropus giganteus* (The Indian flying fox)

**Passer domesticus**



**Corvus culminatus**



**Pycnonotus cafer**



**Monarch butterfly**



***Athene noctua***



***Acridotheres tristis***



**Placodes trivialis**



**Orange Blister Beetle**

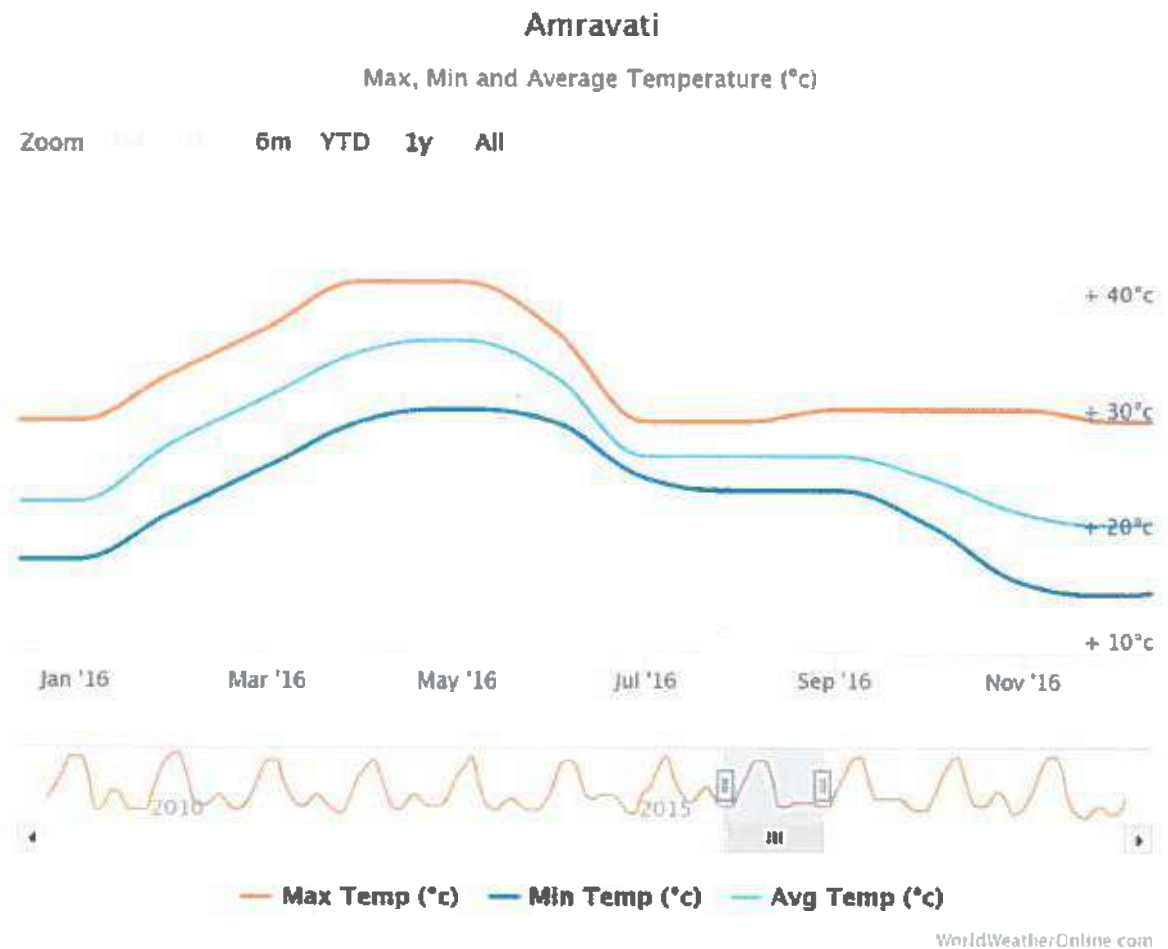




### VIII. Weather Data of Amravati and VBMV

Amravati is a city in the Indian state of Maharashtra. Amravati is the second-largest and populous city of Vidarbha region of Maharashtra after Nagpur. It is the administrative headquarters of the Amravati district. It is also the headquarters of the Amravati division which is one of the six divisions of the state. Among the historical landmarks in the city are the temples of Shree Ambadevi, Shri Krishna and Shri Venkateshwara Swamy.

Amravati has a tropical wet and dry climate with hot, dry summers and mild to cool winters. Summer lasts from March to June, monsoon season from July to October and winter from November to March. The highest and lowest temperatures ever recorded were 49.1 °C on 25 May 2013 and 5.0 °C on 9 February 1887 respectively.

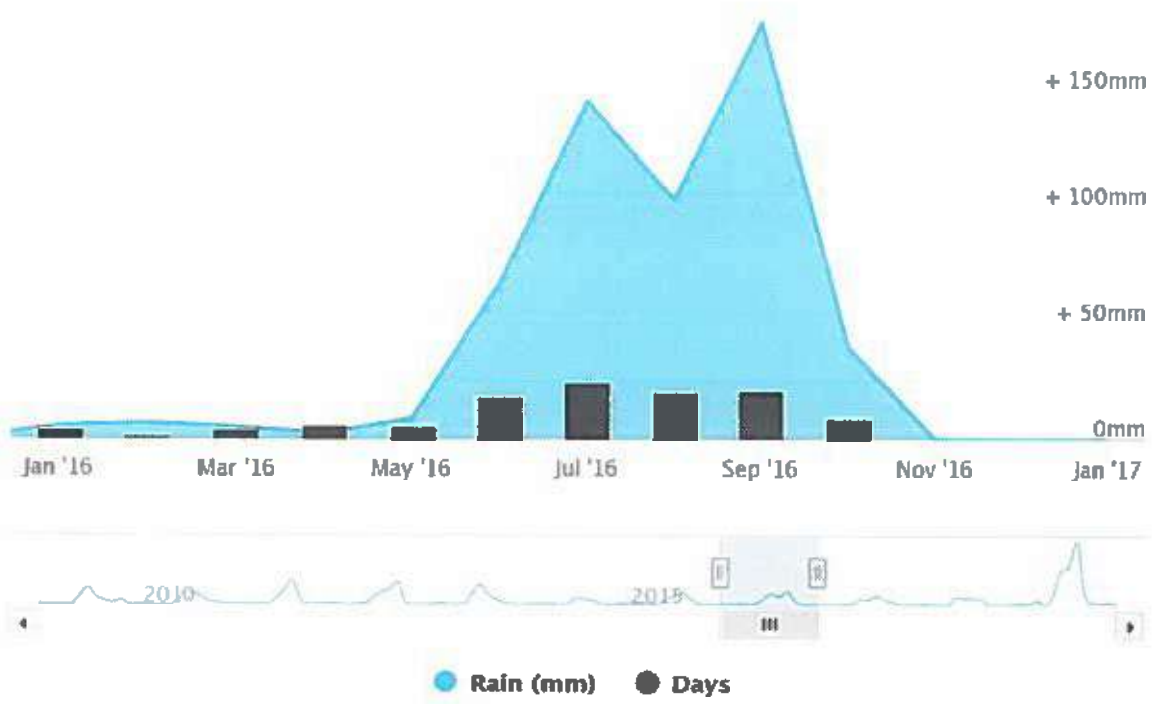


### Amravati

Average Rainfall Amount (mm) and Rainy Days

Zoom

6m YTD 1y All



WorldWeatherOnline.com

### **IX. Waste Disposal of VBMV**

Waste management is one of the burning problems not only in India but also in the world. Hence it is necessary to use the things properly and manage them cautiously. The main purpose behind this audit is to analyze the quantity and volume of solid waste and their proper management in college campus. Similarly, to make aware about their hazardous effects and to create awareness amongst the students, teachers about minimum use, reuse and recycle of the waste. This report will help for further solid waste management and to go for green campus development.

Waste disposal are the activities and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process. The waste from all around the college is separated daily as wet and dry waste in different bags which are disposed separately. Dry waste includes paper, cardboard, glass tin cans etc. on the other hand; wet waste refers to organic waste such as tree drop leaves etc. Separation of waste is essential as the amount of waste being generated today causes immense problem. The material was composted and evaluated as a fertilizing material. Disposal of these waste results in the production of good quality organic manure that can be used as soil amendments and source of plant nutrients. The college has adopted Vermiculture Composting unit for tree leave and garden waste in campus. After complete process of vermicomposting, it is used as manure in the garden and lawns.

E-waste generated in the campus is very less in quantity. The cartridges of laser printers are refilled outside the college campus. Administration conducts the awareness programmes regarding E-waste Management with the help of various departments.

**X. Electrical Power Consumption at VBMV**

VBMV, being one of the largest college of Amravati City, consumes on an average 12750 unit per month of electricity. The authority keeps on replacing the old filament bulbs, CFL bulbs and tube light by low energy consuming LED bulb and LED tubes and bulky high-power consuming fans by energy efficient fans in order to keep the electricity consumption of the college as low as possible. Equipments like Computers are used with power saving mode. Also, campus administration runs switch –off drill on regular basis. In all departments like Physics, Chemistry, Mathematics, Botany, Zoology, Management, Arts and Commerce etc electricity was shut downed after occupancy time is one of green practices for energy conservation. All the air conditioners installed in college campus are with Five star rating in Power saving. Classrooms are made with sufficient cross ventilation and light so that the use of electricity can be minimized. This shows the institutions commitment towards a more reliable and greener option and reducing its carbon footprint.

**ENVIRONMENT AUDIT**

**XI. Air Quality in Amravati and VBMV**

The ambient air quality data for Amravati city and VBMV for the last one year shows that there are very less polluted particles in ambient air, AQI for SO<sub>2</sub> & NO<sub>X</sub> parameters are within the range of CPCB standards. High Volume Sampler is an instrument used for monitoring of air quality parameters in the college campus by following the guidelines, rules and formats prepared by Ministry of Environment and Forest, New Delhi, Central Pollution Control Board. Overall air monitoring and analysis is performed by consulting agency and their expert team.

**Air Quality Determination**

| Sr. No. | Parameters      | Average Reading | Unit               | CPCB Standards           | Remarks           |
|---------|-----------------|-----------------|--------------------|--------------------------|-------------------|
| 1       | RSPM            | 42              | µg/ m <sup>3</sup> | 100.0 µg/ m <sup>3</sup> | All within limits |
| 2       | SO <sub>2</sub> | 51              | µg/ m <sup>3</sup> | 80.0 µg/ m <sup>3</sup>  |                   |
| 3       | NO <sub>2</sub> | 43              | µg/ m <sup>3</sup> | 80.0 µg/ m <sup>3</sup>  |                   |
| 4       | CO<br>(8 hours) | 0.6             | mg/m <sup>3</sup>  | 2.0 mg/m <sup>3</sup>    |                   |

All above mentioned air parameters are below the standard limits given by CPCB.

## **XII. Water Analysis Report of VBMV**

Water quality testing is important because it identifies contaminants and prevents water-borne diseases. Drinking or using contaminated water can result in severe illness or death. That is why it is important to ensure that drinking water is safe, clean and free from bacteria and disease.

The parameters for water quality are determined by the intended use. Work in the area of water quality tends to be focused on water that is treated for human consumption, or in the environment.

### **Drinking Water Analysis of VBMV**

| <b>Sr. No.</b> | <b>Parameters</b>      | <b>Average Results</b> | <b>Unit</b>     |
|----------------|------------------------|------------------------|-----------------|
| 1              | pH                     | 7.6                    | -               |
| 2              | Colour                 | 4.9                    | Hazen units Max |
| 3              | Total Dissolved Solids | 460                    | mg/l Max        |
| 4              | Sulphate               | 145                    | mg/l Max        |
| 5              | Chlorine               | 0.04                   | mg/l Max        |
| 6              | Nitrate                | 29                     | mg/l Max        |
| 7              | Total Hardness         | 192                    | mg/l Max        |
| 8              | Calcium Hardness       | 182                    | mg/l Max        |
| 9              | Total Coliforms        | -                      | MPN/100 ml      |

All the parameters were within standard desirable limits of drinking water quality (BIS IS: 10500:1991).

### **XIII. Noise Level in the VBMV**

Noise pollution is one of the biggest problems of our society. Unwanted sound or sound at wrong place at wrong time is considered as a noise pollution. The noise levels / Sound pressure level (SPL) measurements were carried out using precision sound level meter or dB meter. The noise level measurement was periodically carried out at six locations, at outside as well inside the college campus. The major source of noise identified in the college campus has been predominantly the vehicular movement, and the transportation activities in nearby area.

From the monitoring survey of noise levels it was observed that the day time noise levels were observed in the range of 45 to 61 dB(A). The maximum noise level recorded is 61 dB(A) A and minimum noise level is 45 dB(A).

**XIV. Recommendations**

1. **Installation of solar panel for sustainable use of electricity**
2. **Street light and outdoor light run on solar energy.**
3. **Minimize the use of chemical pollutants.**
4. **To create plastic free campus and evolve health consciousness among the Stakeholders.**
5. **Impart environmental education through systematic environmental management approach and improving environmental standards benchmarking for environmental protection initiatives.**
6. **Build up an environmental ethic and value systems in youngsters.**
7. **To increase environmental consciousness throughout the campus among all the stakeholders.**
8. **Enhance the environmental guidelines and duties.**
9. **Install waste water treatment plant for waste water generated through canteen and hostels.**