



Shri Shivaji Education Society's



Shivaji Arts & Science College
Chikhli, District : Buldhana, 443201, India

**INTERNAL GREEN & ENVIRONMENT
AUDIT REPORT**
2019 - 2020



Prepared by:

Internal Green & Environment Audit Committee
Shivaji Arts & Science College
Chikhali, District Buldhana



Acknowledgement

Internal Green and Environment Audit Committee would like to thank the management of Shri Shivaji Education Society's Shivaji College of Arts & Science College, teaching & non-teaching staff, students, parents and adjoining community for extending their co-operation and valuable inputs in collection of various facts and figures. This is a significant step taken by the college and their efforts towards their contribution in conservation of resources, a worth mentioning here.

Internal Green and Environment Audit Committee also wish to thank EFEC for helping Internal Green and Environment Audit Committee in organizing 'Workshop on understanding Environment Management System' and appreciate their cooperation for extending their knowledge through out the process of Internal Green and Environment Audit program. Internal Green & Environment Audit Committee express gratitude towards valuable guidance & contribution made by various NGOs, individuals and Chikhali Nagar Palika in contributing their knowledge and expertise in compiling technical data required in preparation of audit. Our special thanks are due to the Principal, Dr. O. S. Deshmukh of Shivaji Arts & Science College, Chikhali for giving us valuable guidance.

About Shivaji Arts & Science College

Shivaji Arts & Science College, Chikhali was established in 1967 to serve ever growing educational needs of the society. Dr. Panjabrao Deshmukh and Dalitmitra Pandharinath Patil came together under the banner of Shri Shivaji Education Society, Amravati. Adv. R. D. Bhonde 'Sarkar' and Dalitmitra Santoshrao Patil along with other socio-political leader helped a lot to establish this institution. The farmers also contributed in this holy and sacred task. It has upgraded itself with the introduction of Arts Faculty at UG level in 1971, Commerce at UG level in 1989 and PG in Commerce in 2009, PG in Science and Arts in 2010. English medium UG commerce has started in 2011. College added research degrees program such as M.Phil. and Ph.D. in Science and Commerce. YCMOU centre is also established in 2012. Also new subjects like Music, Home Economics and Bioinformatics are added at degree level. At Junior level fresh water fish and music are added. UGC sponsored career Oriented Program like, Biotechnology, finance Management and Aquaculture, Communication skills in English, Instrumentation and Fashion Designing also opened to develop skills at 3 tier level. Human Right Education and Duties Course have been started for holistic development. The discipline and dedication of management, co-operation and help extended by teaching and Non-teaching staff and local people have played instrumental role in bringing the institution to it's present status and structure. With the values, transparency, honesty and integrity the college promises to be one of the most exemplary institution in the region.



Google map satellite photo of Shivaji Arts & Science College, Chikhali

Latitude : 20°21'02.4"N - Longitude : 76°15'53.4"E

Shri Shivaji Education Society's
Shivaji Arts & Science College
Chikhali, District Buldhana, Maharashtra

IGEAC : Internal Green and Environment Audit Committee

| Sr. No. | Name | Designation | Sign |
|---------|----------------------|--|---------------------|
| 01 | Dr. O. S. Deshmukh | Principal / Chairman | |
| 02 | Dr. V. U. Pochhi | IQAC Co-ordinator IGEAC | |
| 03 | Dr. J. J. Jadhav | Political Science, Member, IGEAC | |
| 04 | Dr. M. T. Nikam | Zoology, Member, IGEAC | |
| 05 | Prof. S. N. Mendhe | Microbiology, Member, IGEAC | |
| 06 | Prof. S. L. Kumbhare | Chemistry, Member, IGEAC | |
| 07 | Prof. N. B. Thakre | Physics, Member, IGEAC | |
| 08 | Prof. S. A. Salve | Mathematics, Member, IGEAC | |
| 09 | Dr. A. B. Kadam | Comp Science, Member, IGEAC | |
| 10 | Dr. S. I. Jukkalkar | English, Member, IGEAC | |
| 11 | Dr. G. G. Malte | Marathi. Member, IGEAC | |
| 12 | Mr. Devendra Telkar | External Member, IGEAC | |
| 13 | Mr. Uday Vaze | NGO : Srushti Vaibhav External Member, IGEAC Director : EFEC | <i>Uday P. Vaze</i> |
| 14 | Dr. R. P. Gawai | Community Member, IGEAC | |
| 15 | Mr. Ajay jadhao | Member, IGEAC | |
| 16 | Ku. Janhavi Joshi | Student's Representative Member, IGEAC, Student's Representative | |

The Internal Green & Environment Audit Committee authenticate observations, records and recommendations in this report.

Internal Green & Environment Audit Key Steps:

- Pre Audit Training Workshop : June 2019 (Online)
- Questionnaire Data Collection : July 2019 to March 2020
- Draft report completed : May 2020 (Online)
- Review Meeting : May 2020 (Online)
- Final report completed : June 2020

Synthesis Document

Internal Green and Environment Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental factors of various establishments. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the ambience.

Thus it is imperative that the college evaluate its own contributions towards 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. Internal Green and Environmental Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council.

The Internal Green & Environment Audit Committee was formed. The committee decided to conduct Internal Green and Environmental Audit of the college in June, 2019. The motive of the internal audit was to make sure that the practices followed in the campus are environment friendly. Internal Green and Environment Audit is a systematic assessment of day to day activity with special focus on how resources are utilized with minimum impact on environment.

The questionnaire was obtained with the help of external member of the Internal Green & Environment Audit Committee. It was observed and evidence were brought together 'what degree to which the departments are in compliance with the applicable regulations, policies and standards and to ensure that the development of the college aims at sustainable development and at the same time keeping the college campus green and pollution free.

The methodology was simple and started right from collecting data, insight inspection, evaluation, computation, conducting physical survey and review of the relevant documentation.

Statement of Assertion

The Internal Green & Environment Audit Committee has adopted the audit procedure that meets the terms of International Standards of Internal Auditing Practices. The committee is cause to feel certain that adequate and relevant audit procedures were followed, concrete evidence were gathered and conclusion were drawn from facts. The Internal Green and Environment Audit committee believe that recommendations are for improving the effectiveness of environmental management efforts made by the college. Changes or additions in management practices should be systemic, must be done through series of small steps and every concerned individual must be well informed about changes and additions made in management practices. Recommendations are based on a evidence compiled in this report as they existed at the time of the audit.

Compendium

It was truly evident from the data collected in several visits to Shivaji Arts & Science College that teaching & non teaching staff, students of the college are aware about the importance of efforts to save and protect environment in the campus in everyday's work. The college staff follow best course of action such as reducing all types of waste, time to time garden maintenance, follow composting practices, follow ways and means to reduce energy consumption, conduct review meetings, organize environmental educational activities for staff as well as for students. Although, it was also observed that, many of the practices followed by the college are in nascent stage and needs further action to improvise environment management system.

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Introduction

The expeditious urbanization and economic development at local, national and international level has led to several environmental and ecological emergencies. To prevent damages due to site specific activities, practices, processes and procedures followed by various institutions, businesses, organizations or factories, it becomes essential to adopt methods, process and procedures for making green campus for the institutions, businesses, organizations or factories which will lead for sustainable development.

Shivaji Arts & Science College has concentrated its focus to save environment at every possible way. The college made it clear from its environment policy that its a priority area to conserve environment and promote education & awareness about keeping campus green. The purpose of conducting the Internal Green and Environmental Audit is to understood and make continuous efforts to reduce adverse impact on environment. The college hires consultants and resource persons in environment education and protection. The methodology to conduct Internal Green Audit & Environmental Audit was designed with the help of consultants and NGOs with the teaching staff of the college. It includes draft of questionnaire, in-situ site inspection in the campus, scrutinize and evaluate documentation, monitor procedures, practices and processes carefully. The formation of Internal Green and Environment Audit Committee with involvement of external subject specialist has made report valuable. The Internal Green and Environment Audit Committee has made valuable recommendations. The committee proposed remedial procedures to reduce the carbon foot print of the college. It works for the betterment of environment in the college campus including air, water, noise, soil quality, waste management, care for flora & fauna in campus, importance of paperless working, future plans for adopting alternative energy creation by adopting solar powered energy generation.

Internal Green Audit

Internal Green Audit is a process of systematic verification of activities, identification of adverse impacts, evaluation of systems, documentation process, reporting and analysis of environmental diversity of various institutions, businesses, organizations or factories. It aims to analyze environmental practices and processes within and outside of the targeted institution, business, organization or factory, which will have an impact on the ecologically friendly environmentally-safe ambience.

Internal Environment Audit

An Internal Environmental Audit is an assessment performed to ensure that institutions, businesses, organizations or factories are complying with environmental regulations policies. It examines the amount of adverse impact on environment or risk of injury that may be posed by the assessed entity and determines the types of pollution being produced by looking at a broad range of site specific activities, practices, processes and procedures. The information compiled from these factors to determine what remedial procedures are required to be added for better good.

Scope

Internal Green and Environment Audit play a significant role in continuing operation of institutions, businesses, organizations or factories. It keeps institutions accountable by scrutinizing their site specific procedures and determining what remedial measures are required to be added or put in place to ensure institutions, businesses, organizations or factories are following the proper statute.

Objective

The key objectives of an internal environmental audit therefore are to: determine how well the environmental management systems and equipment are performing, verify compliance with the relevant national, local or other laws and regulations, minimize human exposure to risks from environmental, health and safety problems.

Methodology

Internal Green & Environment Audit Committee was formed and decided to call upon an open discussion on how to conduct Internal Green & Environment Audit. The committee came to a conclusion that external party will look into overall infrastructure, procedures, practices and operation of the college and will draft detail questionnaire. Questionnaires provide a relatively rapid and efficient way of obtaining large amounts of information from a large number of people. Questionnaire are easy to respond. Specifically, answers obtained through closed-ended questions with multiple choice answer options are easy to obtain and less time consuming.

Answers obtained from open-ended questionnaire are analyzed using qualitative methods and they involve discussions and critical analyses without any difficulty. This was useful because the information lead to concrete conclusions. The methodology also included a physical inspection of the campus, observation, and review of the documentation, interviewing key persons and data analysis, measurements, and suggesting recommendations.

The efforts were taken to understand following focus areas and emphasis was given to know facts on the ground :

Overall area inspection to find out efforts taken by the college to promote greenery in campus.

Management & performance of water distribution and its conservation, be it a municipal supply or the water collected by rain water harvesting.

Drinking water and water consumption for other purposes such as construction, gardening etc and its management.

Use of electricity and other types of energy uses and management related to it.

Test air quality, noise level and water in the campus with the help of external service providers.

Observe solid and liquid waste management in the campus.

E-waste management.

Initiatives, projects and activities taken for conservation of flora, fauna and the measures taken to improve environment management systems in the college campus.



Tree plantation in the past.

Environment Policy

Shivaji Arts & Science College not only target to impart quality education but also understand responsibility towards protection of environment for the future generation. The college wish to create environmentally safe practices to ensure that the college campus is kept green by reducing its carbon foot print. The college monitors its operation and make it a economically successful & sustainable along with being socially responsible. Environment Policy compels each and every one of the college to follow practices, processes and operation supported by identified groups and individuals. Environment Policy also target to enroll external parties such as vendors and suppliers in achieving the environment conservation objective in their relevant fields too.

Environmental Policy Document

Shivaji Arts & Science College, Chikhli, is a quality conscious college. It protects its own environment and efforts are taken to keep it a pollution free green campus. Environment protection, conservation and education are key areas that are weaved together in education and in academia of the college. The management, teaching & non teaching staff, students and community members of the college look after the environment carefully. Every year, during rainy season, trees are planted and are carefully looked after. It's the responsibility of Shivaji Arts & Science College to preserve the greenery in the collage campus.

- i. To create awareness regarding environmental policy of our college to management, teaching & non teaching staff, students and community members.
- ii. To keep college campus free from pollution by avoiding open fire, managing garbage, prohibiting tobacco & pan masala spitting in the campus. Caution poster in regard to health, hygiene and environment protection are displayed in the campus.
- iii. Segregate bio-degradable & non bio-degradable waste. Create composting facility for bio-degradable waste conversion to make manure and recycle non-biodegradable waste.
- iv. To provide safe drinking water to students and staff by installing RO Water Filtration facility at the campus.
- v. To install and maintain 'Rain Water Harvesting' in the campus. To collect every rain drop falling on the roof of the collage and to store the harvested water in water harvesting well constructed at the college.
- vi. To observe 'No Vehicle Day' in persuit of reducing vehicular pollution.
- vii. To communicate electronically in an effort to reduce consumption of paper.
- viii. To place the dustbins and promote hygienic condition in the college campus.
- ix. To evaluate the environmental performance of the college by conducting Internal Green and Environment Audit annually.



Trees plantation at various places in the college campus.

Location of the college

Shivaji Arts & Science College at Chikhali in Buldhana district of Maharashtra state is a prominent arts & science college in the Vidarbha region. It is strategically situated in the center of the Chikhali. It is well connected by state highway road, enabling students from adjoining district to reach the college comfortably.

Latitude : 20°21'02.4"N

Longitude : 76°15'53.4"E

Land use and land cover

Total area of the college campus: 18.5 Acres

Built up area: 3794.68 Sq. Ft.

Area reserved for green cover:

Annexure II : Schematic diagram of college

Population:

Students : 1043

Teaching Staff: 36

Non Teaching Staff: 31

Floating : 5 Approx

Internal Green and Environment Audit Training

Shivaji Arts & Science College has a well-defined decentralized and participatory organizational structure to coordinate and promote the academic and administrative function. The organizational structure has different units of statutory bodies. College has organized Pre Internal Green & Environment Audit Orientation Program and taken special efforts in enrolling teaching, non teaching staff, students and community representatives to attend the program. Environmentalist & subject specialist presented the various topics such as protecting the environment by preventing practices that creates wastage, enhancing environmental performance, introducing new ways to reduce pollution.

Audit Questionnaire & Audit Forms

Internal Green and Environment Audit Committee was given host of audit forms and questionnaire. The committee was well supported by teaching and non-teaching staff of the college to collect the data. The evidences were collected by referring Questionnaire and field visits to the college.

Water Quality

Access to safe drinking-water is essential to health, a basic human right and a component of effective policy for health protection. Water is essential to sustain life, and a satisfactory (adequate, safe and accessible) supply must be available to all. Improving access to safe drinking-water can result in tangible benefits to health.

Sound Pressure Level Testing

Several sound pressure level tests were carried out to measure noise pollution created by vehicle passing by college campus. The college is situated in the heart of the city. The road adjacent to the college campus is one of the busiest road in the city. The results of the tests (Annex No. XI) came out to be slightly above prescribed limit. To combat the noise pollution caused by vehicular noise the committee has recommended remedial measures (Annexure XIII).

Primary Air Quality

Several primary air quality tests were carried out. The results of the tests came out to be in prescribed limit. To stop air pollution caused by vehicular emission the committee has recommended remedial measures (Annexure XII).

Installations

The installation of solar panels, compost pits and rainwater harvesting system are noteworthy initiatives taken by Shivaji Arts & Science College. The campus is equipped with huge size of rain water collection network and has a well for collection and for charging water table. (Annexure : xvi)

Bio diversity in campus

Shivaji Arts & Science College campus is interspersed with trees strategically planted, makes it a picturesque landscape suitable for a wide spectrum of flora and fauna.

Flora

The college has been planting and conserving trees, climbers, creepers, herbs and shrubs since the inception in 1970. Wide variety of floral species can be seen in the campus. College has taken painstaking effort in maintaining green cover and a botanical garden nurture host of wide variety of medicinal species for educational purpose. (Annexure iii)

Fauna

The green cover in the campus helps in creating favorable condition for many living organisms such as butterflies and other friendly insects such as lady bird beetles, spiders, birds and mammals such as squirrels. (Annex No. vi).

Green initiatives

Shivaji Arts & Science College, Chikhali is a premier institute in Vidarbha and is aware about importance of educating students about environment and special efforts are taken by Environment Committee in initiating activities that reduces its adverse impacts on environment. Initiative such as Tree Plantations, Rain Water Harvesting, No Vehicle Day, Installation of Solar Panels, Plastic Waste Free Campus, Regular Maintenance Of Electrical Gadgets, Awareness Training Workshops, Waste Disposal, Solid Waste Management, Organic Waste Management are organized by the college. Internal Green & Environment Audit Committee has recommended few remedial measures. (Annexure x)

Recommendations

Short term and long term recommendations are given by Internal Green & Environment Audit Committee. The recommendations made by the committee will improve the environment and will make positive impact on environment performance of the college. (Annexure xiii)

Shivaji Arts & Science College, Chikhali has received many awards and recognition over the last few years. (Annexure xv)

Post Internal Green & Environment Audit Commitments

Review meeting was organized to discuss about recommendations made by committee after the Green & Environment Audit process was completed. The internal Green & Environment Audit committee has given special attention to train each and every member of the college about PDCA model. PDCA i.e. Plan Do, Check and Act model surely helps in bringing continuous improvement in every working of the college.

Green & Environment Audit Document Storage

Documents related to Internal Green and Environment Audit are stored at IQAC chamber.

Annexure I

Environment Committee

To impart environment education and to educate, enroll students about environment protection and conservation of flora & fauna. Exhibitions, competitions, initiatives and study tours are organized on time to time basis..

Environmental Committee

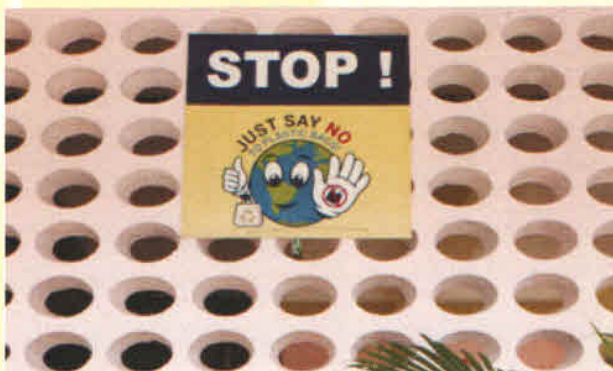
| Sr. No. | Name | Department | Designation |
|---------|----------------------|-------------------|---------------------------|
| 1. | Dr. O. S. Deshmukh | Botany | Principal |
| 2. | Dr. V. U. Pochhi | Botany | IQAC Coordinator |
| 3. | Dr. J. J. Jadhao | Political Science | (NAAC Coordinator) Member |
| 4. | Prof. S. A. Katole | Electronics | Member |
| 5. | Dr. M. T. Nikam | Zoology | Member |
| 6. | Prof. S. N. Mendhe | Microbiology | Member |
| 7. | Prof. S. L. Kumbhare | Chemistry | Member |
| 8. | Prof. N. B. Thakre | Physics | Member |
| 9. | Prof. S. A. Salve | Mathematics | Member |
| 10. | Dr. A. B. Kadam | Computer Science | Member |
| 11. | Dr. S. I. Jukkalkar | English | Member |
| 12. | Dr. G. G. Malte | Marathi | Member |
| 13. | Dr. V. R. Padwal | History | Member |
| 14. | Dr. S. M. Kalakhe | Economics | Member |
| 15. | Dr. R. P. Gawai | Commerce | Community Member |
| 16. | Mr. Ganesh Sonone | | Student Representative |
| 17. | Ku. Kalyani Bhutekar | | Student Representative |



Eco-friendly Colour Preparation Workshop organized by Environment Committee



Tree Plantation organized by NSS



Tree Plantation organized by Environment Committee

Annexure II

Schematic diagram of Shivaji Arts & Science College



Annexure III

Bio-diversity in campus : Flora I

Since the formation of the College, immense efforts are taken to plant trees every year. On celebration of World Forest Day, Environment Day every year college planted trees and tried to increase green cover. Wide variety of floral species can be seen thriving in the college campus and variety of life forms such as birds, mammals, butterflies can be seen at all periods of the day.

Students and botany head of the department record observations of floral and faunal species seen in the campus. Exhaustive list of species found in the campus are presented in following table.

| S.NO | BOTANICAL NAME | FAMILY | HABIT | NUMBER |
|------|---------------------------------------|----------------|-------|--------|
| 1. | <i>Abutilon indicum</i> Linn. | Acanthaceae | Herb | 08 |
| 2. | <i>Accacia nilotica</i> Linn. | Fabaceae | Tree | 05 |
| 3. | <i>Accacia leucophloea</i> Linn. | Fabaceae | Tree | 02 |
| 4. | <i>Achyranthus aspera</i> Linn. | Amaranthaceae | Herb | 01 |
| 5. | <i>Adhatoda vasica</i> Linn. | Acanthaceae | Shrub | 03 |
| 6. | <i>Aegle marmelos</i> Linn. | Rutaceae | Tree | 2 |
| 7. | <i>Ageratum conyzoides</i> Linn. | Asteraceae | Herb | 2 |
| 8. | <i>Ailantus excels</i> Roxb. | Simaroubaceae | Tree | 1 |
| 9. | <i>Aloe barbadensis</i> Linn. | Liliaceae | Herb | 10 |
| 10. | <i>Aloe vera</i> | Liliaceae | Herb | 37 |
| 11. | <i>Amarantus caudatus</i> Linn. | Amaranthaceae | Herb | 04 |
| 12. | <i>Annona squamosa</i> Linn. | Annonaceae | Tree | 07 |
| 13. | <i>Argemone maxicana</i> Linn. | Papaveraceae | Herb | 293 |
| 14. | <i>Araucaria heterophylla</i> | Araucariaceae | Tree | 02 |
| 15. | <i>Azadirachta indica</i> A. Juss. | Meliaceae | Tree | 234 |
| 16. | <i>Bambusa vulgaris</i> | Poaceae | Tree | 08 |
| 17. | <i>Barleria prionitis</i> Linn. | Acanthaceae | Herb | 2 |
| 18. | <i>Bauhinia racemosa</i> Linn. | Fabaceae | Tree | 4 |
| 19. | <i>Bauhinia variegata</i> Linn. | Fabaceae | Tree | 8 |
| 20. | <i>Bignonia capreolata</i> Linn. | Bignoniaceae | Shrub | 10 |
| 21. | <i>Boerhaavia diffusa</i> Linn. | Nyctaginaceae | Herb | 17 |
| 22. | <i>Bougainvillea spectabilis</i> . | Nyctaginaceae | Tree | 5 |
| 23. | <i>Butea monosperma</i> (Lamk.) Taub. | Fabaceae | Tree | 15 |
| 24. | <i>Caesalpinia ferrea</i> | Fabaceae | Trees | 18 |
| 25. | <i>Caesalpinia pulcherrima</i> | Fabaceae | Tree | 16 |
| 26. | <i>Callistemon citrinus</i> Stapf. | Myrtaceae | Tree | 09 |
| 27. | <i>Calotropis procera</i> Ait. | Asclepidaceae | Shrub | 20 |
| 28. | <i>Canna indica</i> Linn. | Zinziberaceae | Herb | 4 |
| 29. | <i>Caryota urens</i> | Arecaceae | Tree | 10 |
| 30. | <i>Cassia fistula</i> Linn. | Fabaceae | Tree | 20 |
| 31. | <i>Cassia tora</i> Linn. | Fabaceae | Herb | 25 |
| 32. | <i>Ceiba pentandra</i> | Malvaceae | Tree | 20 |
| 33. | <i>Chenopodium album</i> Linn. | Chenopodiaceae | Herb | 30 |
| 34. | <i>Clitoria ternatea</i> | Fabaceae | Herb | 20 |
| 35. | <i>Coleus forskohlii</i> Auct. | Lamiaceae | Herb | 10 |
| 36. | <i>Croton bonplandianum</i> Baill. | Euphorbiaceae | Herb | 21 |
| 37. | <i>Cynodon dactylon</i> Linn. | Poaceae | Herb | |
| 38. | <i>Cyperus rotundus</i> Linn. | Cyperaceae | Herb | |
| 39. | <i>Citrus lemon</i> | Rutaceae | Tree | 04 |
| 40. | <i>Dalbergia sissoo</i> (Roxb.) DC. | Fabaceae | Tree | 10 |

Annexure IV

Bio-diversity in campus : Flora II

| | | | | |
|-----|--|---------------|-------|----|
| 41. | <i>Datura innoxia</i> Linn. | Solanaceae | Herb | |
| 42. | <i>Delonix regia</i> | Fabaceae | Tree | 17 |
| 43. | <i>Dicanthium annulatum</i> | Poaceae | Herb | |
| 44. | <i>Duranta erecta</i> | Verbenaceae | Shrub | 25 |
| 45. | <i>Eclipta alba</i> (Linn.) | Asteraceae | Herb | |
| 46. | <i>Emblica officinalis</i> Gaertn. | Euphorbiaceae | Tree | 03 |
| 47. | <i>Erythrina variegata</i> | Fabaceae | Tree | 2 |
| 48. | <i>Eucalyptus citriodora</i> Hook. | Myrtaceae | Tree | 07 |
| 49. | <i>Euphorbia hirta</i> Linn. | Euphorbiaceae | Herb | |
| 50. | <i>Ficus benghalensis</i> Linn. | Moraceae | Tree | 04 |
| 51. | <i>Ficus benjamina</i> Linn. | Moraceae | Tree | 02 |
| 52. | <i>Ficus carica</i> Linn. | Moraceae | Tree | 02 |
| 53. | <i>Ficus religiosa</i> Linn. | Moraceae | Tree | 05 |
| 54. | <i>Heteropogon contortus</i> Linn. | Poaceae | Herb | |
| 55. | <i>Hibiscus rosa-sinensis</i> Linn. | Malvaceae | Shrub | 12 |
| 56. | <i>Ixora coccinea</i> Linn. | Rubiaceae | Shrub | |
| 57. | <i>Kigelia pinnata</i> (Jack.) DC. | Bignoniaceae | Tree | 4 |
| 58. | <i>Lantana camara</i> | Verbenaceae | Shrub | 47 |
| 59. | <i>Lathyrus odoratus</i> Linn. | Fabaceae | Herb | |
| 60. | <i>Launaea asplenifolia</i> Hook. F. | Asteraceae | Herb | |
| 61. | <i>Malvastrum coromandelianum</i> Linn. | Malvaceae | Herb | |
| 62. | <i>Mangifera indica</i> Linn. | Anacardiaceae | Tree | 05 |
| 63. | <i>Melia azedarach</i> Linn. | Meliaceae | Tree | 15 |
| 64. | <i>Mimusops elengi</i> | Sapotaceae | Tree | 07 |
| 65. | <i>Musa ensetesuperber</i> | Musaceae | Tree | 02 |
| 66. | <i>Nelumbo nucifera</i> | Nymphaeaceae | Shrub | 20 |
| 67. | <i>Nerium indicum</i> Mill. | Apocynaceae | Shrub | 18 |
| 68. | <i>Nyctanthes arbor-tristis</i> Linn. | Oleaceae | Tree | 15 |
| 69. | <i>Ocimum sanctum</i> | Lamiaceae | Herb | 37 |
| 70. | <i>Oreodoxa regia</i> Kunth Syn. <i>Roystonea regia</i> | Arecaceae | Tree | 8 |
| 71. | <i>Oxalis corniculata</i> Linn. | Oxalidaceae | Herb | 2 |
| 72. | <i>Parthenium hysterophorus</i> Linn. | Asteraceae | Herb | |
| 73. | <i>Phoenix sylvestris</i> Linn. | Arecaceae | Tree | 2 |
| 74. | <i>Phyllanthus niruri</i> Hook. f. | Euphorbiaceae | Herb | 03 |
| 75. | <i>Plumeria pudica</i> | Apocynaceae | Tree | 2 |
| 76. | <i>Polyalthia longifolia</i> Sonn. | Annonaceae | Tree | 26 |
| 77. | <i>Prosopis cineraria</i> Linn. | Fabaceae | Tree | 10 |
| 78. | <i>Psidium guajava</i> Linn. | Myrtaceae | Tree | 03 |
| 79. | <i>Prunus amygdalus</i> , Sny. <i>Prunus dulcis</i> | Rosaceae | Tree | 07 |
| 80. | <i>Ranunculus sceleratus</i> Linn. | Ranunculaceae | Herb | 2 |
| 81. | <i>Rosa indica</i> Linn. | Rosaceae | Shrub | 50 |

Annexure V

Bio-diversity in campus : Flora III

| | | | | |
|-----|--------------------------------------|----------------|-------|----|
| 82. | <i>Scirpus litoralis</i> Schrad Syn. | Cyperaceae | Herb | |
| 83. | <i>Setaria glauca</i> Linn. | Poaceae | Herb | |
| 84. | <i>Sida acuta</i> Linn. | Malvaceae | Herb | |
| 85. | <i>Sisymbrium irio</i> Linn. | Brassicaceae | Herb | |
| 86. | <i>Solanum nigrum</i> Linn. | Solanaceae | Herb | |
| 87. | <i>Solanum Xanthocarpum</i> Linn. | Solanaceae | Herb | |
| 88. | <i>Syzygium cumini</i> | Myrtaceae | Tree | 03 |
| 89. | <i>Tagetes erecta</i> Linn. | Asteraceae | Herb | |
| 90. | <i>Tectona grandis</i> | Lamiaceae | Tree | 93 |
| 91. | <i>Thespesia populnea</i> | Malvaceae | Tree | 4 |
| 92. | <i>Thuja orientalis</i> Linn. | Cupressaceae | Tree | 10 |
| 93. | <i>Tribulus terrestris</i> Linn. | Zygophyllaceae | Herb | 5 |
| 94. | <i>Tridax procumbens</i> Linn. | Asteraceae | Herb | |
| 95. | <i>Vinca rosea</i> Linn. | Apocynaceae | Herb | 50 |
| 96. | <i>Vitex negundo</i> | Lamiaceae | Shrub | 7 |
| 97. | <i>Withania somnifera</i> Linn. | Solanaceae | Herb | 15 |
| 98. | <i>Xanthium strumarium</i> Linn. | Asteraceae | Herb | |
| 99. | <i>Zizyphus jujuba</i> Mill. | Rhamnaceae | Tree | 13 |

Annexure VI

Bio-diversity in campus : Fauna : Birds

| Sr. No. | Common Name | Scientific Name | मराठी नाव | Number |
|---------|----------------------|------------------------------|--------------|--------|
| 1 | Indian grey hornbill | <i>Ocyrceros birostris</i> | राखी घनेश | 9 |
| 2 | Spotted owl | <i>Athene brama</i> | पिंगळा | 13 |
| 3 | Shikra | <i>Accipiter badius</i> | शिक्रा | 5 |
| 4 | Greater coucal | <i>Centropus sinensis</i> | भारद्वाज | 12 |
| 5 | Green bee eater | <i>Merops orientalis</i> | वेडा राघू | 22 |
| 6 | Little swift | <i>Apus affinis</i> | पाकोळी | 27 |
| 7 | Red vented bulbul | <i>Pycnonotus cafer</i> | बुलबुल | 13 |
| 8 | Common iora | <i>Aegithina tiphia</i> | सुभग | 9 |
| 9 | Cinereous tit | <i>Parus major</i> | कवडी रामगंगा | 7 |
| 10 | Asian koel | <i>Eudynamys scolopaceus</i> | कोकिला | 5 |
| 11 | Ashy prinia | <i>Prinia socialis</i> | वटवट्या | 31 |
| 12 | Purple sunbird | <i>Cinnyris asiaticus</i> | शिंजीर | 10 |
| 13 | Indian silverbill | <i>Euodice malabarica</i> | माळमुनिया | 5 |
| 14 | Oriental white eye | <i>Zosterops palpebrosus</i> | चप्पेवाला | 15 |
| 15 | House crow | <i>Corvus splendens</i> | कावळा | 47 |
| 16 | Indian Jungle crow | <i>Corvus culminatus</i> | डोमकावळा | 37 |
| 17 | Common myna | <i>Acridotheres tristis</i> | साळुंकी | 53 |
| 18 | Common hoopoe | <i>Upupa epops</i> | हदहद | 07 |
| 19 | Blue rock pigeon | <i>Columba livia</i> | कवुतर | 21 |
| 20 | Common tailor bird | <i>Orthotomus sutorius</i> | शिंपी | 27 |
| 21 | Rose ringed parakeet | <i>Psittacula krameri</i> | कंठवाला पोपट | 13 |

Annexure VII

Bio-diversity in campus : Fauna : Birds

| | | | | |
|----|---------------------------|--------------------------------|-----------------|----|
| 22 | Alexandrine parakeet | <i>Psittacula eupatria</i> | करण पोपट | 15 |
| 23 | Common hawk cuckoo | <i>Hierococcyx varius</i> | पावश्या | 04 |
| 24 | Pond heron | <i>Ardeola grayii</i> | ढोकरी | 7 |
| 25 | Red -naped ibis | <i>Pseudibis papillosa</i> | शरटी | 5 |
| 26 | House sparrow | <i>Passer domesticus</i> | चिमणी | 70 |
| 27 | Spotted dove | <i>Stigmatopelia chinensis</i> | ठिपकेदार होला | 15 |
| 28 | Cattle egret | <i>Bubulcus ibis</i> | गायबगळा | 21 |
| 29 | White throated kingfisher | <i>Halcyon smyrnensis</i> | खंडया | 17 |
| 30 | Indian golden oriole | <i>Oriolus kundoo</i> | हळद्या | 27 |
| 31 | Scaly breasted munia | <i>Lonchura punctata</i> | ठिपकेदार मुनिया | 5 |
| 32 | Yellow wattled lapwing | <i>Vanellus malabaricus</i> | टिटवी | 13 |

Annexure VIII

Bio-diversity in campus : Fauna : Animals

| Sr.No. | Family/Scientific name | Common name | Number |
|--------|--|-----------------------|--------|
| | Sciuridae | | |
| 1 | <i>Sciurus carolinensis</i> Gmelin, 1788 | Squirrel | 40 |
| | Canidae | | |
| 2 | <i>Canis lupus familiaris</i> Linnaeus, 1758 | Dog | 7 |
| | Suidae | | |
| 3 | <i>Sus scrofa</i> Linnaeus, 1758 | Pig | 5 |
| | Muridae | | |
| 4 | <i>Mus musculus</i> Linnaeus, 1758 | Mouse | 100 |
| | Cercopithecoidea | | |
| 5 | <i>Nasalis larvatus</i> (van Wurm, 1787) | Monkey | 20 |
| | Microchiroptera | | |
| 6 | <i>Chiroptera</i> Blumenbach, 1779 | Bats | 7 |
| | Chamaeleonidae | | |
| 7 | <i>Chamaeleo calyptratus</i> A. M. C. Duméril and A. H. A. Duméril, 1851 | Chameleon | 11 |
| | Agamidae | | |
| 8 | <i>Calotes versicolor</i> (Daudin, 1802) | Common garden Calotes | 17 |
| | Lacertidae | | |
| 9 | <i>Podarcis muralis</i> (Laurenti, 1768) | Wall Lizard | 40 |
| | Scorpionoidea | | |
| 10 | <i>Scorpiones</i> | Scorpions | 27 |
| | --- | | |
| 11 | <i>Serpentes</i> Linnaeus, 1758 | Snake | 8 |
| | Ranidae | | |
| 12 | <i>Lithobates sylvaticus</i> (LeConte, 1825) | Frog | 36 |

Annexure IX

Bio-diversity in campus : Fauna : Animals

| | | | |
|----|---|-------------------|------|
| | Araneidae | | |
| 13 | <i>Araneae</i> | Spider | 40 |
| | <i>Nymphalidae</i> | | |
| 14 | <i>Danaus plexippus</i> (Linnaeus, 1758) | Monarch Butterfly | 70 |
| | -- | | |
| 15 | <i>Chilopoda</i> | Centipdes | 30 |
| | Spirobolida | | |
| 16 | <i>Narceus americanus</i> (Palisot de Beauvois, 1817) | Millipedes | 20 |
| | Aeshnidae | | |
| 17 | <i>Anisoptera Selys, 1854</i> | Dragonflies | 200 |
| | Erebidae | | |
| 18 | <i>Lymantria dispar</i> (Linnaeus, 1758) | Gypsy moth | 60 |
| | Acrididae | | |
| 19 | <i>Schistocerca americana</i> (Drury, 1773) | Grasshopper | 40 |
| | Mantidae | | |
| 20 | <i>Mantis religiosa</i> (Linnaeus, 1758) | Mantis | 31 |
| | Vespidae | | |
| 21 | <i>Polistes fuscatus</i> | Wasp | 34 |
| | Apidae | | |
| 22 | <i>Apis mellifera</i> Linnaeus, 1758 | Honey bee | 5000 |
| | Formicidae | | |
| 23 | <i>Formicidae</i> | Ants | |
| | Culicidae | | |
| 24 | <i>Aedes aegypti</i> (Linnaeus, 1762) | Mosquito | |
| | Rhinotermitidae | | |
| 25 | <i>Isoptera</i> | Termite | |
| | Blattidae | | |
| 26 | <i>Periplaneta americana</i> (Linnaeus, 1758) | Cockroach | 45 |
| | Carabidae | | |
| 27 | <i>Coleoptera</i> Linnaeus, 1758 | Beetles | 65 |
| | Subulinidae | | |
| 28 | <i>Rumina decollata</i> (Linnaeus, 1758) | Snail | |
| | Lumbricidae | | |
| 29 | <i>Lumbricus terrestris</i> Linnaeus, 1758 | Night crawler | |

AnnexureX

Green initiatives by Shivaji Arts & Science College

Shivaji Arts & Science College, Chokhali made special efforts to work with Chikhali Nagar Palika regarding solid waste recycling. The waste is regularly collected by Nagarpalika and helps collage to keep campus clean & green.

Making of Eco-friendly Color for Holi / Rang Panchami celebrations.

Raksha Bandhan was celebrated in an innovative way i.e. tying rakhi to dozen of trees in the college campus. It spread a message to take care of trees planted at the campus and it created an emotional bond between students, teachers and trees.

Installation of vermi-compost pit. As students n staff tend to dispose waste food in the compost pit, manure is available and is utilized in the garden of the college.

No Vehicle Day is observed once in week. This surely is an activity that reduce vehicular pollution. It also educates student and staff to follow minimalization approach. This is a significant step taken by Shivaji Arts & Science College, Chikhali.

Quit Zone is identified at certain spots in the college that enables to maintain certain calmness for promoting concentration level of the students and staff. This surely is an activity that support in imparting quality education in the campus.

Display of Plastic Free Campus signs and posters sensitize students and staff to keep college campus clean and green. The messages are displayed at important locations and reminds passing by students and staff to be part of solution and refrain from using single use plastic which is harmful to the environment.

Swach Bharat Abhiyan initiative was launched to keep campus clean n green and to promote hygienic conditions.

Save Paper Save Tree initiative was organized by Environment Cell. An event to enroll students to minimize their use of papers which leads saving few trees from cutting.

Save energy, save electricity signs are fixed at many electrical switch boards. The signs promoting students and staff to switch off electrical gadgets such as fans, lights when they are not in use. This helps to minimize consumption of electrical energy.

NSS activities are organized such as tree plantation and swachata initiatives on time to time basis. Cleaning drive was organized by the college and also involved teaching, non teaching staff and students to participate in it.

Old unused furniture was refurbished and brought into everyday use.

To manage waste generated by classrooms, the dust bins are kept outside the classroom and it made safe waste disposable on everyday basis.

New energy conversant lights were installed where ever possible to reduce the energy consumption. Old electrical cables were replaced with new ones.

Annexure XI

Sound Pressure Level Testing Report

((())) Sound Pressure Level Testing ((()))

Sound waves are vibrations of air molecules carried from a noise source to the ear. Sound is typically described in terms of the loudness (amplitude) and the pitch (frequency) of the wave. Loudness (also called sound pressure level, or SPL) is measured in logarithmic units called decibels (dB). The normal human ear can detect sounds that range between 0 dB (hearing threshold) and about 140 dB, with sounds between 120dB and 140 dB causing pain (pain threshold). The ambient SPL in a library is about 35 dB, while that inside a moving bus or subway train is roughly 85 dB; building construction activities can generate SPLs as high as 105 dB at the source. SPLs decrease with distance from the source.

Standards of sound:

To control the generation of noise by various sources in the environment, the **Central Pollution Control Board**, under the **Ministry of Environment and Forests, Government of India**, has set standards of sound for different categories of areas (residential, commercial, industrial and silence zones), separately for day-time and at night [Table 1].

| [Table 1] Category of Area/Zone | Limits in dB(A) | |
|------------------------------------|-----------------|------------|
| | Day Time | Night Time |
| Industrial Area | 75 | 70 |
| Commercial Area | 65 | 55 |
| Residential Area | 55 | 45 |
| Silence Zone | 50 | 40 |

| Date/Time | Location | Remarks | dB(A) | Date | Location | Remarks | dB(A) |
|-----------|----------------------------|---------|-------|------|----------|---------|-------|
| 11.54 | CLASSROOM I | | 73 | | | | |
| 11.59 | STAFFROOM | | 71 | | | | |
| 12.30 | SOMP DEPT SCP & CS SCIENCE | | | | | | |
| 12.40 | C LAB ROOM II | | 80 | | | | |
| 12.40 | ELECTRONICS PRACTICE LAB | | 49 | | | | |
| 12.48 | CH LAB | | 52 | | | | |
| 12.52 | ZOOLOGY LAB | | 59 | | | | |

Reducing noise pollution can be achieved through regulation, improved building methods, better product design, noise barriers and better planning. Growing populations, urbanization and modern technologies all contribute to increased noise pollution. It may sound extreme, but it qualifies as a practical way to reduce noise pollution. Noise is produced by strong sound waves or vibrations, which can be significantly reduced by barriers. By installing a live fence, you'll be creating a barrier that absorbs the strong sound waves or vibrations, thereby reducing noise pollution around your office or institution. Vegetation reduces noise pollution through a phenomenon called sound attenuation, which is the reduction of sound intensity. Leaves, twigs, and branches on trees, shrubs absorb and deflect sound energy. Declare a "No Horn Zone" in Hospital, Educational institutes, and Residential Areas : Horns from trucks, buses, and cars produce a considerable degree of noise pollution and as such, the introduction of no horn zone can help reduce noise pollution. Governing and city authorities hold the power to introduce policies that can help reduce noise pollution. The laws should limit the amount of noise in public and private places to cut noise pollution. Do regular checking of noise levels: Keeping the noise level within the limit requires frequent verification of noise level. Therefore see to it that regular checking of noise level is done.

The human ear distorts its sensitivity to lower and higher frequency sounds. Sound meters try to mimic this process by weighting the readings. This scale is known as the **A scale** and readings taken using this scale will be denoted as **dB(A)**.



The World Health Organization (WHO)

World Health Organization suggests that the optimal sound level in a classroom should be **at or below 35 dB. Noise pollution is an invisible danger.** The most common health problem it causes is Noise Induced Hearing Loss (NIHL). Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. **The Central Pollution Control Board (CPCB)** has proposed a new set of fines between **Rs 1,000 and Rs 1 lakh** for those who violate norms restricting noise pollution under the Noise Pollution (Regulation and Control) Rules, 2000.

Name of the institute: Shri Shivaji Science & Arts College, Chikhali
 Place:
 Date: 15/05/20
 Seal: R.



Annexure XII

Primary Air Quality Report

Primary Air Quality Testing



| Time/In or Out | PM 2.5 | PM1 | PM10 | TVOC | CH2O | Humidity | Temp |
|-------------------------------------|--------|-----|------|-------------|--------|----------|---------|
| 11:56 Classroom | 18 | 20 | 10 | 0.006/0.07 | 0.0000 | 77% | 24.0°C |
| Staffroom | 13 | 17 | 8 | 0.000/0.104 | 0.000 | 71% | 24.4°C |
| 12:32 CLAB - COMP DEPT SC-PG-CSE | 16 | 21 | 10 | 0.008 | 0.000 | 82% | 21.30°C |
| 12:35 COMP SC PG LAB | 16 | 21 | 10 | 0.169 | 0.000 | 75% | 23°C |
| 12:40 ELECTRONIC PARTICLE LAB | 18 | 22 | 10 | 0.078 | 0.000 | 69% | 24°C |
| 12:46 CHEMISTRY PR LAB | 14 | 9 | 18 | 0.052 | 0.000 | 68% | 25.0°C |
| 12:52 ZOOLOGY PR LAB | 14 | 18 | 8 | 0.013 | 0.000 | 67% | 25°C |
| EMF 0: | 0.00 | | | | | | |

| Air Quality Grade | PM 2.5 Average Value (ug/m ³) |
|--------------------|---|
| Excellent | 0-35 |
| Good | 35-75 |
| Slight Pollution | 75-115 |
| Moderate Pollution | 115-150 |
| Severe Pollution | 150-250 |
| Serious Pollution | > 500 |

TVOCs: Total Volatile Organic Compounds (TVOCs) are a group of compounds with high vapor pressure and low water solubility. In other words, these substances won't easily bind to themselves (volatile) or dissolve in water (organic). Inside your home or in an institution, volatile organic compounds are harmful, carcinogenic air pollutants that evaporate at normal indoor atmospheric conditions. TVOCs affect your sense of well-being. Some VOCs are even bad for health.

CH2O: Formaldehyde is a colorless poisonous gas synthesized by the oxidation of methanol and used as an antiseptic, disinfectant, histologic fixative, and general-purpose chemical reagent for laboratory applications. Formaldehyde is readily soluble in water and is commonly distributed as a 37% solution in water; formalin, a 10% solution of formaldehyde in water, is used as a disinfectant and to preserve biological specimens. Environmentally, formaldehyde may be found in the atmosphere, smoke from fires, automobile exhaust and cigarette smoke. Small amounts are produced during normal metabolic processes in most organisms, including humans.

Particulate Matter measurement with laser scattering method. Particulate matter is a mixture of liquid droplets and solid particles found in the atmosphere. The particle sizes are classified by size for the purpose of measurement, emission control, effects, and mitigation strategies. Historically, particles with diameters less than 10 microns (PM-10) have been the major concern, because they can easily pass into the lung. However, more recently, scientists have labeled particle sizes measuring 2.5 micron (PM-2.5) in diameter and smaller as the most damaging to human health because they penetrate and remain in the deepest passages of the lungs. Particulate matter contains toxic chemicals, some of which are known to cause cancer. They can irritate the respiratory system, accumulate in the lungs to cause silicosis, asbestosis, and aggravate conditions such as asthma and other respiratory disease. PM-10 also interferes with plant photosynthesis. The main sources of PM-10 include carbon used in industrial and domestic combustion gasoline, diesel, industrial processes, and fires, and includes dust, soot, metallic particles, cement, pollen, and organic compounds. The Indian NAAQS for PM-2.5 is 40 ug/m³.

Humidity: Most people find that a relative humidity between 30 to 60 percent is the most comfortable, with indoor humidity ideally between 30 to 50 percent. Low levels of humidity lead to very dry air which increases the prospect of catching airborne viruses like the flu, possibly due to both their ability to survive longer in dry cool conditions and irritated nasal passages making it easier to catch them. Eczema can be exacerbated and dry skin can also be uncomfortable. Higher humidity in the home creates an environment for two of the most common and undesirable triggers for asthma and allergy - dust mites and mold.

Name of the institute: *Shri Shivaji Science & Arts College*
 Place: *Chikhali*
 Date: *15/09/20*
 Seal: *[Signature]*



Annexure XIII

Recommendations / Analysis

Internal Green & Environment Audit Committee surveyed and scrutinized the overall environmental performance of Shivaji Arts & Science College and recommendations are made as per the following:

- i) Review trees planted in the college campus, designate each every tree with numbers. Assign scientific and vernacular names to the trees.
- ii) Provide sufficient, accessible and well-displayed dustbins at mostly seen areas in the college campus for collection of recyclable waste. Every care is to be taken by caretaker to empty these dustbins and waste collected must be regularly dispatched to safe disposal center designated by municipality.
- iii) Automated sensors must be installed to prevent the overflow from water tanks. Install a water meter and assign a specific person to record water consumption in the college campus.
- iv) The committee also recommends to appoint a specific person who will monitor the consumption of water and create a mechanism to use all electrical gadgets sensibly.
- v) The Internal Green and Environment Audit Committee found no evidence that may show how many papers are used in the academical year. Though there are no numbers available, the measure to reduce use of paper in the college can not be initialized. Committee strongly recommends to monitor the paper consumption on monthly basis. Proper records must be maintained and mechanism must be placed to reduce the consumption of paper. Documents after their validity must be sent for pulping.
- vi) The Internal Green and Environment Audit Committee recommends to initiate measure that may reduce pollutants in the campus. The Primary Air Quality Testing results show slight increase in TVOC range which itself suggest to add barriers in between adjacent road and the campus. Committee recommends to consult subject specialist to bring down pollutant numbers to some extent.
- vii) The Internal Green and Environment Audit Committee recommends college to focus on bringing down sound pollution by putting sound barrier in between adjacent road and the college campus. The sound pressure levels detected inside classrooms in the college are slightly above prescribed limits. The committee recommends to consult subject specialist and reduce noise coming from vehicles passing by adjacent road.
- viii) The Internal Green and Environment Audit Committee appreciate the way Botanical Garden and trees are maintained, but the committee recommends to add more trees, shrubs in pots at every possible place in the campus. A gardner must display maintenance schedule of the garden and involve students in it.
- ix) The Internal Green and Environment Audit Committee recommends to strengthen the present sewage and monitor it on regular basis.
- x) Safe disposal of chemicals, liquid waste and e-waste is mandatory and special care to be taken to maintain it.
- xi) More sensible electrical consumption approach is required at the college campus. The electrical gadget maintenance schedule is required to be displayed at certain spot and care is to be taken to follow it. Even particular person must be designate with the responsibility to do this.
- xii) College must take initiative in reducing its dependance on MS&ED power distribution network and support renewable and carbon-neutral electricity generation options such as generation of electricity by solar energy. College must make long term plans to generate 100% green energy generated at college itself from solar panels.
- xiii) Old fans that makes clicking, grinding, rattling, and ticking noise, must be repaired immediately or be replaced with new one. The disturbing sound from old fans create noise pollution and it is not permissible in classroom. The students may loose important study lessons due to lack of concentration in the studies. Cleaning of tube-lights and fans to be done periodically, to remove dust over it. The college must display maintenance schedule publicly.
- xiv) Occurrence of dense weed growth is noticeable and measures are to be taken for its eradication.
- xv) Roadside avenue trees lack attention and to be painted with specific color for protecting it.

Annexure XIV

Post Internal Green and Environment Audit Review Meeting

Internal Green & Environment Audit Committee review meeting was attended by all teaching and non teaching staff. The detail discussion was carried out and recommendation made by Internal Green and Environment Audit Committee were shared with everyone in the meeting. Unanimously every one present in the meeting agreed to be vigilant enough to take measure and meet the demands of audit reports.

Annexure XV

Awards and recognition received by the college.

Swachh Bharat Abhiyan

To support and involve actively with Swachh Bharat Abhiyaan, Shivaji Arts & Science College, Chikhali has made honest efforts to contribute to this campaign. The college has organized various activities and initiatives viz. cleaning of campus, tree plantation, lectures on swchh Bharat Abhiyan drives about spreading awareness about health, hygiene and sanitation.



Initiatives undertaken by Environment Committee



Annexure XVI

Rain water Collection Well & Vermi-composting Unit



Rain Water Collection Well at Shivaji Arts & Science College, Chikhali



Vermicomposting Unit at Shivaji Arts & Science College, Chikhali

Annexure XVII

Memorandum of Understanding with Garden Club of Amravati



Amravati Garden Club, Amravati

Vivekanand Colony
Amravati - 444603 (MS), India



Shri Shivaji Science and Arts College, Chikhli.

Near parbhariwarth patil square, BIDCC
Dank, Shivaji Nagar Chikhli 443201

Article 1

WHEREAS, the Shri Shivaji Science and Arts College, Chikhli, hereafter "SSAC" is entering into an academic collaboration with Amravati Garden Club, Amravati hereafter "Garden Club" to provide assistance and support to the Graduates and Research Students of this Shri Shivaji Science and Arts College, Chikhli.

Article 2

WHEREAS, the association between both parties will be focused on Student Centre Activities. It must provide access for students to the programs organized by Garden Club.

Article 3

It is binding for both the parties that

- i. Activities should be planned in mutual coordination
- ii. Students' involvement should be there in every activity
- iii. Free access should be there for the exhibitions and shows organized by Garden Club.
- iv. Shri Shivaji Science and Arts College, Chikhli, should provide the venue for organizing different events.
- v. The expenditure incurred on the event's organization should be borne by Shri Shivaji Science and Arts College, Chikhli, with prior discussion and approval of principal and benefit will be transferred to Amravati Garden Club.
- vi. Being a social organization Garden Club requires fund generation out of its associations and collaborations. Therefore, the financial benefit out of an activity under this MoU should be transferred to Amravati Garden Club with mutual agreement.
- vii. Income - Expenditure statement of the activity organized under this Memorandum of Understanding should be prepared, signed by respective authorities, and shared with the Garden Club in a maximum of one month after the activity.
- viii. The resource persons from both institutions should contribute without remuneration.

Annexure XVIII

Memorandum of Understanding with Garden Club of Amravati

Article 1

WHEREAS, the Shri Shivaji Science and Arts College, Chikhli (hereafter 'SSSAC') is entering into an academic collaboration with Amravati Garden Club, Amravati (hereafter 'Garden Club') to provide assistance and support to the Graduate and Research Students of this Shri Shivaji Science and Arts College, Chikhli.

Article 2

WHEREAS, the association between both parties will be focused on Student Centre Activities. It must provide access for students to the programs organized by Garden Club.

Article 3

It is binding for both the parties that

- i. Activities should be planned in mutual coordination
- ii. Students' involvement should be there in every activity
- iii. Free access should be there for the exhibitions and shows organized by Garden Club.
- iv. Shri Shivaji Science and Arts College, Chikhli, should provide the venue for organizing different events.
- v. The expenditure incurred on the event's organization should be borne by Shri Shivaji Science and Arts College, Chikhli, with prior discussion and approval of principal and benefit will be transferred to Amravati Garden Club.
- vi. Being a social organization Garden Club requires fund generation out of its associations and collaborations. Therefore, the financial benefit out of an activity under this MoU should be transferred to Amravati Garden Club with mutual agreement.
- vii. Income - Expenditure statement of the activity organized under this Memorandum of Understanding should be prepared, signed by respective authorities, and shared with the Garden Club in a maximum of one month after the activity.
- viii. The resource persons from both institutions should contribute without remuneration.

Annexure XIX

Memorandum of Understanding with Garden Club of Amravati

Article 4

The grantee institution should explore various financial agencies to support the activities mentioned in article 2 from national, international, or private organizations. The financial accounts have to be settled in coordination with both the authorities.


Article 5

This memorandum of understanding shall be effective from the date of its signing by representatives of both institutions and shall remain in effect until termination of this agreement at any point of time by either of the institutions. The termination of this understanding will require notice in six (6) months advance to the other institution.

In witness of whom, those present have been executed on behalf of the Obligors pursuant to the memorandum dated 31st July, 2021 passed by Member of the Obligors, on the year herein above-written.

Obligors in the presence of whom MoU Signed (Name and Address)


Signature of the Authorities of
Amravati Garden Club


Dr. R. C. Maggirwar
Secretary
Amravati Garden Club,
Amravati



(For office use only)

Signature of the Authorities of the
Grantor Department and Institution



Dr. V. U. Pochhi
Prof and Head,
Deptt. of Botany
Shri Shivaji Science and
Arts College, Chikhli

Accepted for and on behalf of the Principal, Shivaji Science and Arts College, Chikhli and
Amravati Garden Club, Amravati.


Dr. D. D. Kherkar
Secretary
Amravati Garden Club
Amravati



Date : 31st July, 2021
Place : Chikhli


Dr. D. S. Deshmukh
Principal
Shri Shivaji Science and Arts
College, Chikhli
Principal
Shri Shivaji Science & Arts College
CHIKHLI, (Dist. Nanded)

Annexure XX

Memorandum of Understanding with Borgaon Vasu, Social Forestry, Chikhali



Shri Shivaji Education Society, Amravati's
SHRI SHIVAJI SCIENCE & ARTS COLLEGE,
CHIKHLI, DIST. BULDANA (M.S.) 443 201
NAAC 'B' GRADE



DR. A. M. GARODE
PRINCIPAL

SHRI. HANISHAVTEJUN DEKAMURJI
PRINCIPAL

ca/course/35

Memorandum of Understanding (MoU)

17 JUL 2020

BETWEEN

DEPARTMENT OF BOTANY, SHRI SHIVAJI SCIENCE AND ARTS COLLEGE, CHIKHLI
DISTRICT, BULDANA, (M.S.) 443201

AND

SOCIAL FOREST DEPARTMENT, BORGAON VASU DIST. BULDANA


Program entitled: - Certificate Course in Plant Propagation and Nursery Management.

We hereby enter into the understanding to share the academic resource/physical infrastructure for the betterment of the institution/college and students through mutual cooperation and support toward establishing center of skill based certificate courses for enhancing the student's employment prospects.

This will be broadly including the following activities:

1. Extending Talent search and promotion of rural youths to undertake specialized higher studies with a focus on occupational/professional/vocational skills so as to provide work ready human resource to the local/regional industries.
2. Extending placement assistance to prospective (potential) employers.
3. Conducting in-house-training, on-job training, workshop, seminar and technical sessions by inviting experts from the relevant fields.
4. Any other activities to strengthen the following ambience for the students.

In mutual cordship thereof, this memorandum of understanding is signed.


Head, Department of Botany
Department of Botany
Shri Shivaji Science & Arts College
CHIKHLI, Dist. Buldana


Principal
Shri Shivaji Science & Arts
College, Chikhali, Dist. Buldana
Chikhali Dist. Buldana (M.S.) 443201

www.shivajicollege.org

E-mail: shivajicollege@rediffmail.com Phone: -020641 247088101

We Educate, Inspire and Empower...

Annexure XXI

Memorandum of Understanding with Wild life and Environment Conservation Society, Amravati

भारतीय गैर न्यायिक
एक सौ रुपये
Rs. 100
ONE HUNDRED RUPEES
रु. 100
भारत INDIA
INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA 9148 2020 © YN 257666

20/07/2021
श्री. शिवजी विद्यालय अमरावती

14 JUL 2021

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
DEPARTMENT OF ZOOLOGY,
SHRI SHIVAJI SCIENCE AND ARTS COLLEGE, CHIKHOLI
DIST. BULDANA
AND
WILD LIFE AND ENVIRONMENT CONSERVATION SOCIETY AMRAVATI
DIST. AMRAVATI

This MOU is made on- 29 July 2021

About
SHRI SHIVAJI SCIENCE AND ARTS COLLEGE, CHIKHOLI
DIST. BULDANA

Shri Shivaji Science And Arts College, Chikhli, Dist. Buldana is an educational institute run by Shri Shivaji Education Society Amravati. The college was established in 1967 and has undergraduate, post graduate and PhD courses in the faculty of Arts, Commerce and Science. The College also has various career oriented courses. The college has succeeded in assisting


Annexure XXII

Memorandum of Understanding with Wild life and Environment Conservation Society, Amravati

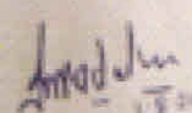
Annexure III

Terms and conditions

- Admitted students will be eligible for training and other benefits.
- The fees schedule will be as per the decision of Wildlife and Environment Conservation Society in consultation with the Shri Shivaji Science And Arts College, Chikhli, Dist. Buldana
- The institute will provide the resource required.
- Certification will be provided by the institution and WECS
- The activities will be conducted in Wild life and Environment Conservation Society (WECS) and in an Institution.
- Life membership of WECS is compulsory for Institute.
- MOU will remain valid for next ten years.
- Institutional membership of WECS is mandatory


Principal
Shri Shivaji Science And Arts College,
Chikhli, Dist. Buldana
Principal
Shri Shivaji Sci. & Arts
College, Chikhli, Dist. Buldana


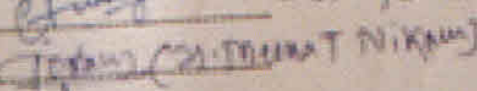




Secretary
WECS
Amravati

Secretary
Wildlife & Environment
Conservation Society
Amravati (M.S.)



In the presence of witnesses

1.  (Dr. G.A. Wagh)
2.  (Dr. Pratik Nikam)
3.  (Dr. V.A. Hemke)

Saving our planet,
lifting people out of poverty,
advancing economic growth
these are one and the same fight.
We must connect the dots
between climate change,
water scarcity, energy shortages,
global health, food security and
women's empowerment.
Solutions to one problem
must be solutions for all.

– Ban Ki-moon

*Thank
you!*

Prepared by:

Internal Green & Environment Audit Committee
Shivaji Arts & Science College, Chikhali, District Buldhana

कला अज्ञान