

**SMT. M. M. SHAH MAHILA ARTS  
COLLEGE, KADI**  
MANAGED BY M. P. SHAH EDUCATION SOCIETY, KADI



**GREEN AUDIT REPORT 2022-23**



**WCB RESEARCH FOUNDATION**

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## EXECUTIVE SUMMARY

A nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. A clean and healthy environment aids effective learning and provides an effective learning environment. Educational institutions now a days are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. 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. The activities pursued by colleges can also create a variety of adverse environmental impacts. Environmental auditing is a process whereby an organization's environmental performance is tested against its environmental policies and objectives. Green audit is defined as an official examination of the college which has effects on the environment and as a part of such practice, internal Green Audit is conducted to evaluate the actual scenario at the campus.

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. Green auditing and the implementation of mitigation measures is a win-win situation for all the college, the learners and the planet. It provides staff and students better understanding of green impact on campus. Green auditing promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. 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 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.

In Smt. M. M. Shah Mahila Arts College, Kadi campus the audit process involved initial interviews with management to clarify policies, activities, records and the co-operation of staff and students in the implementation of mitigation measures. This was followed by collection of data through the questionnaire, review of records, observation of practices and observable outcomes. In addition, the approach ensured that the management and staff are active participants in the green auditing process in the college.

The baseline data prepared for the Smt. M. M. Shah Mahila Arts College, Kadi will be a useful tool for campus greening, resource management, planning of future projects, and a document for implementation of sustainable development of the college. Existing data will allow the college to compare its programmes with those of peer institutions, identify areas in need of improvement, and prioritize the implementation of future projects. We expect that the management will be committed to implement the green audit recommendations. We are happy to submit this green audit report to the Smt. M. M. Shah Mahila Arts College, Kadi authorities.

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**August 31<sup>st</sup> 2023**

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## CHAPTER 1

### INTRODUCTION

#### VISION

To strengthen the societal structure by raising social competence of women through education and to create equal opportunities for higher education to the girls from all socio-economic status.

#### MISSION

- To ensure that no girl should be deprived of college education in this area
- To provide, the “state-of-art” education system in the rural area at an affordable cost
- To promote total personality development of the students by increasing their active participation in such activities
- To solve problems in self development of students and train them to realize their potentiality for solving problems by themselves
- To produce such volunteers as can lead educationally deprived classes to college and to become the role model

#### OBJECTIVES

- To grow to be the institution of Higher education for the development of healthy social structure through education and to make college education available to the girls from various social strata.
- To develop scientific attitude in students through proper education, so that they may become integral part of our progressive nation in the future and merge with the main stream of the society.
- To stimulate activities helpful in physical, mental, emotional and moral development of the students and raise social contacts and facilities.
- To keep ready for adapting to the ever changing education structure and create modern teaching-learning facilities, so as to suit national as well as international demand
- To update practices in Higher education and enrich higher education by the appointment of highly qualified and dedicated faculty, to give them all encouragement and incentives.

#### CAMPUS & COLLEGE BUILDING AREA

**Table 1. Campus & college building area of Smt. M. M. Shah Mahila Arts College, Kadi**

Campus area	10.5 acres
Built up area	1400 sq.mt

## NAAC ACCREDITATION

**Table 2. NAAC Accreditation of Smt. M. M. Shah Mahila Arts College, Kadi**

NAAC accreditation cycle I	B Grade with 2.22 CGPA, 2009
NAAC accreditation cycle II	B Grade with 2.48 CGPA, 2016
GSIRF	3 Star, 2022
NIRF	Participation, 2022-2023

## ABOUT COLLEGE

Kadi was in the vanguard of Primary and Secondary education in the erstwhile Gaykwad State. During the post independent years, the philanthropists of the town had felt the need for higher education which gave the birth to C. N. Arts & B. D. Commerce College. The college was started at the fort of Kadi in the building of Kadi Kelvani Mandal by M. P. Shah Education Society in 1963. That time; it was one of a few colleges in North Gujarat and was the first College started in Kadi taluka.

Somehow the traditional mind set of parents and owing to too little motivational factors, the further study of Higher Education was given up by many girls of the town and surrounding rural areas after passing higher secondary school examination. In order to give momentum to College education to girls from all social strata, the then visionary philanthropists of M. P. Shah Education Society started Smt. M. M. Shah Mahila Arts College exclusively for young girls in its Highway campus in 1991. The college is now entering in 32<sup>nd</sup> year of its tireless journey of providing quality higher education to the young girls of social clusters having low GER. Thus, it is a great opportunity to young girls to carry out UG as well as PG in humanities and languages with affordable cost. This is the only college for women in Kadi' taluka. The Institute has been growing as institution of higher education for the development of healthy social structure through education and to make college education available to the girls from various social strata.

To stimulate activities helpful in physical, mental, emotional and moral development of the students and raise social contacts and facilities is an important goal of the Institute. We always give priority to develop scientific attitude in students. The Institute keeps ready for adapting to the ever changing education structure and creates modern teaching-learning facilities. To appoint highly qualified and dedicated faculty and to give them all encouragement and incentives is a noteworthy practice observed by the Institute. The salient feature of the institute can be described as:

Only Arts College exclusively for women at Kadi town and surrounding areas. Catering the needs of Higher Education for women from weaker section of society. Favorable student-teacher as well as student-computer ratio. As an Institute of Grant-in-Aid, tuition fee and transportation in Public Buses are waived totally by State Government to students of all



categories. An excellent infrastructure created through UGC grant, Management share and support from Philanthropists of the society. High passing percentage of students indicating good preparation of students for exam. Student centric and interactive teaching learning process. Highly qualified faculty and there is no faculty crunch at UG level, Proper sports coaching and achievements by the students.

The college operates following certificate courses B.Voc. (UGC New Delhi 2020) in that 5 Diploma Courses under UGC MHRD approved skill based courses under NSQF. College runs some cross cutting issues courses which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum (table 3).

**Table 3. Number of certificate programs offered till the year 2023**

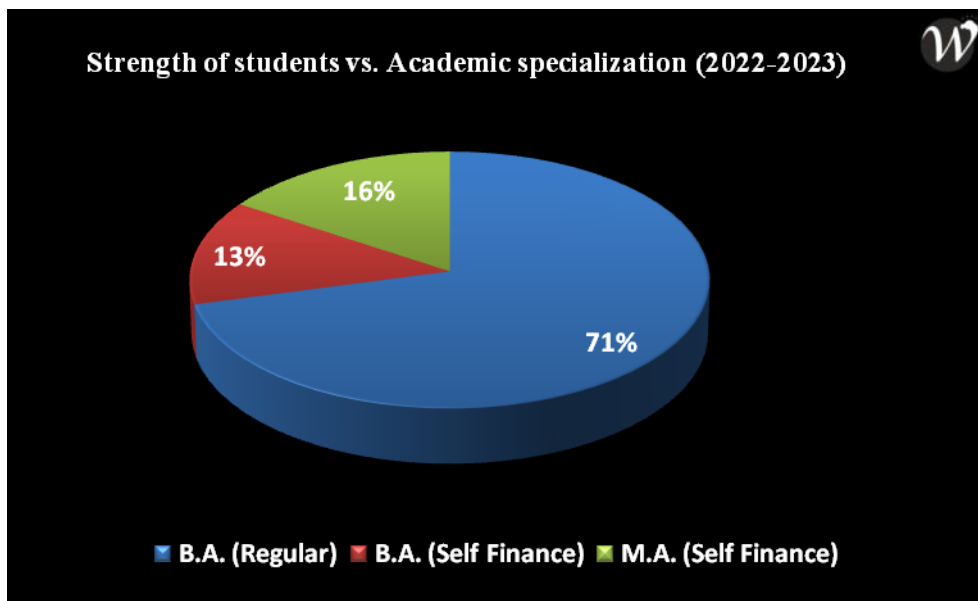
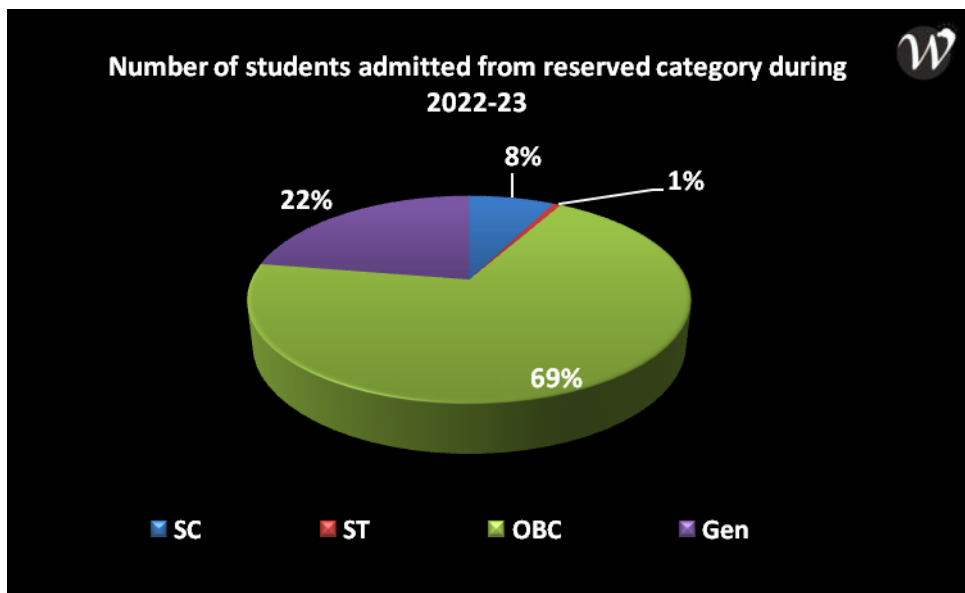
Sr. No.	Courses	Name of certificate programs offered
1	Diploma in vocational Course (Under B.Voc.)	Beauty & wellness
2		Yoga, Fitness & Naturopathy
3		Fashion Designing & Tailoring
4		Web Designing & Animation
5		Banking
6	Certificate Course	Personality Development
7		Writing Skill in Gujarati
8		Physical Fitness
9		Indian Social Problems
10		Banking
11	Soft Skill Program	Leadership
12		Language and Communication Skill
13		Health and Hygiene
14		Basic Computer Skill
15	Courses addressing Cross Cutting Issues	Computer Skills –I
16		Sports and Practice

Sr. No.	Courses	Name of certificate programs offered
17	Courses addressing Cross Cutting Issues	Disaster Management
18		Indian Ideas of National Making of Gandhi, Sardar & Swami Vivekanand
19		Human Rights
20		Personality Development
21		Gender Issue
22		Women and Society
23		Gender Sensitized Literature
24		Portrayal of Women
25		Gender Equality
26		Human Values
27		Value Based Literature
28		Human Value Based Stories
29		Historical Aspects of Ancient India
30		Women Emperor
31		Indian Culture and Social Issues
32		Individual, family and Community in Indian Social Thoughts
33		Origin of Society
34		Need and Importance of Healthy Mind and Healthy body
35		Importance of Mental Health
36		Stress Management
37		Environment and Sustainability
38		Development and Environmental Economics

Sr. No.	Courses	Name of certificate programs offered
39	Courses addressing Cross Cutting Issues	Family System and Environmental Issues
40		Social Problems and Environmental Issues
41		Professional Ethics
42		Importance of Paying Tax for Nation Building
43		Role of Consumers
44		How to Run Business
45		Industrial Policy
46		Communication Skill
47		Business Skill

Smt. M. M. Shah Mahila Arts College is a women's Institute with a motto of imparting excellent education in a safe, secure and serene atmosphere. The college is dedicated to nurture the girls' aspirants equipped with latest skills to meet challenges of modern world along with to equip the prospective teachers with theoretical inputs and practical skills. The college operates at under graduate and post graduate level keeping in mind goals and objectives that is to make the students employable through holistic education and skill development.

Collegiate Women's Development Committee (CWDC) regularly organizes programs for Women Empowerment, Women's issues, their Rights, Women's Education and career. College comprises anti-sexual harassment committee and anti-ragging committee where they can register their grievances. College also organizes counseling programs for female students and sometimes their parents are also called to help them in some cases to insure the students' safety and good academic progress. The college has total 512 students are studying in the college during the academic year 2022 -2023 (figure1) and seats for reserved category in the year of 2022-2023 which is graphically presented in below diagram (figure 2).

**Strength of students vs. academic specialization during 2022-2023****Figure 1. Strength of students vs. academic specialization during 2022-2023****Number of students admitted from reserved category during 2022-2023****Figure 2. Number of students admitted from reserved category during 2022-2023**

## LIST OF FUNDS BY STATE GOVERNMENT TO THE COLLEGE TILL THE YEAR OF 2023

**Table 4. Funds by state government to the college till the year of 2023**

Funding Agency	Scheme
State Government	NSS
	Adjustment Grant
	Adjustment Grant
	Finishing School
KCG State Government	UDISHA - Placement Cell
	DEDF

## TEACHING, LEARNING AND EVALUATION

The college augments important innovative interventions in the Teaching-Learning process to facilitate the expansion of the prescribed syllabus in multiple directions and encourage the students of the entire spate to participate in various activities and courses with expert guidance from their mentors. College organizes English enrichment program by Education department which includes life skills and spoken English. Teachers use ICT tools like overhead projectors for presentation. Use of ICT and Smartphone to teach students online through various platforms like Microsoft Teams, Google Meet, Teachers' Educational Videos on YouTube. Facility for the teaching and learning process in the staffroom includes internet facility, LCD Projector, laptop, CDs. Students are encouraged to attend SANDHAN, alive teaching programme of the State Government.

- College prompts workshops and seminars to highlight changes and implement them.
- To encourage participative learning, intra-departmental activities are organized.
- Periodic class tests are conducted for effective teaching learning process.
- The feedback mechanism has been strengthened to receive responses from all the stakeholders. The feedback is analyzed and appropriate action is taken.
- Sports Committee of the college guides students to participate in many intercollegiate, district and national level activities.
- Internal Quality Assurance Cell (IQAC) promotes modern teaching pedagogies
- IQAC initiatives contributing in incremental improvements since its inception are:
  - Mapping of Course and Program Outcomes
  - FDPs on Research Awareness for faculty
  - Strong Mentoring System
  - Organizing Alumni meet and workshops

## STUDENTS SUPPORT AND PROGRESSION

- Total 154 students enrolled into higher education. Among this, 07 students enrolled into abroad studies and other students enrolled into further studies in the Gujarat state only.
- Committees like Career Counseling Cell, NSS Committee, NCC committee, IQAC committee under which there are various committees were formed such as Student Union Committee, GymKhana Committee, Cultural Committee, Career Guidance Committee, College Development Committee, Student Aid Fund Committee, Vocational Courses Committee, etc.
- College has following career committees for monitoring the internal quality of the institution:

**Table 5. Career committees for monitoring the internal quality of the institution**

Committees	Rolls of committees
U.G.C Committee	The Principal invites the committee to have advice for taking important decisions related to policy matters.
Internal Quality Assurance Cell	The cell work for improving quality of academic and non-academic activities of the college.
NAAC Committee	Helps to maintain the college standards according to the NCTE and UGC norms.
NSS and NCC Committee	It comprises Program Officers and committee members to perform numbers of activities.
Staff council Committee	The committee plans and conduct different activities round the year.
Guidance and Counseling Cell	The members of guidance cell provide counseling services to students.
Discipline Committee	It ensures the discipline in the college during routine days and on special occasions.
Grievance Redressal cell	It deals with all types of grievances, complaints and malpractices including those received from Students, Faculty and other Stakeholders.

**RESEARCH, INNOVATIONS AND EXTENSION****SEMINAR OR WEBINAR/ WORKSHOP CONDUCTED DURING 2022-2023****Table 6. Seminar or workshop conducted during the year 2022-2023**

<b>Resource Person/Department</b>	<b>Date</b>	<b>Name of Expert Lecture</b>
<b>DR. SANGITABEN C. ACHARYA (ORGANIZER)</b>		
Viralbhai Kanudavala	26.08.2022	Intellectual Property Rights
Prof. Sarthak Agresar	06.09.2022	Role of Teachers as a Envisage of NEP-2020
Dr. Shirish Chindhade	24.09.2022	NAAC Sponsored National Level Seminar on New Education Policy and NAAC Accreditation Process
Economics, Psychology, Sociology, History	31/12/2022	Seminar on What is Research and How to select Research Area?
<b>DR. RATANBEN P. SOLANKI (ORGANIZER)</b>		
Zankhanaben Trivedi	26.07.2022	Women Empowerment
Mrs. Komalben Thapa	02.02.2023	Positive Thinking
Dr. Revatiben Deshpandey	02.02.2023	Soft Skill
Mr. Darshanbhai Prajapati	03.02.2023	Career in Competitive Examination
Mr. Chaitanyabhai Patel	03.02.2023	Time Management
Mr. Mayankbhai Patel	03.02.2023	Business Management
Dr. Ankitbhai Rami	04.02.2023	How to Success in Competitive Exam?
Dr. Vrajeshbhai Mistri	04.02.2023	How to Success in Life?
Economics, Psychology, Sociology, History	07.01.2023	How to find Objectives of Research

Resource Person/Department	Date	Name of Expert Lecture
<b>GUJARATI, ENGLISH DEPARTMENT (ORGANIZER)</b>		
Dr. Varshaben C. Brahmbhatt	23.07.2022	Seminar on How to write Research Paper?
Dr. Varshaben C. Brahmbhatt Prof. Harsukhbhai H. Parmar Prof. Sanobar Shekh	08.12.2022 to 10.12.2022	Research Methodology Workshop Languages
Prof. Sanobar Shekh	06.08.2022	Seminar on A review of the research literature
Prof. Harsukhbhai H. Parmar	30.07.2022	Seminar on Use of Technology in Research
Prof. Shivangini Brahmbhatt	13.08.2022	Seminar on Problem selection and formulation
<b>ECONOMICS, PSYCHOLOGY, SOCIOLOGY, HISTORY DEPARTMENT (ORGANIZER)</b>		
Dr. Hinaben M. Patel, Dr. Ratanben P. Solanki, Prof. Dharmendrabhai K. Chaudhari, Dr. Sangitaben C. Acharya, Prof. Jitendrabhai D. Vihol, Dr. Apexaben N. Pandya	20.12.2022 to 22.12.2022	Research Methodology Workshop Social Sciences
Dr. Apexaben N. Pandya	21/01/2023	Seminar on What is Hypothesis?
Prof. Jitendrabhai D. Vihol	28/01/2023	Seminar on How to Collect Data for Research?



## RESEARCH PAPERS PUBLICATIONS PER TEACHERS IN THE JOURNALS NOTIFIED ON UGC

**Table 7. Research papers published per teachers in the journals notified on UGC**

<b>DR. HINA M. PATEL (ECONOMICS DEPARTMENT)</b>		
1	Paper: Financial Forecasting Model in Developed And Developing Economies	Jijnasa: Journal of the History of Ideas and Culture, Volume 38, No.1 UGC
2	Paper: Impact of The Global Pandemic-Corona on The Indian Economy	Sardar Patel Institute of Economic And Social Research – “anvesak” A Bi-Annual Journal, Volume 51, No.01 (III), UGC Care Group-1
3	Paper: Adverse Effect of Covid Pandemic of Indian Exports	Saarth E-Journals of Research, Volume 6, Issue 1
4	Paper: The Recent Economic Future	Saarth E-Journals of Research, Volume 6, Issue 1.
5	Paper: Impact of Foreign Capital Inflow on Income Inequality Economics	Research Matrix- An International Double Blind Peer Reviewed & Refereed Multidisciplinary Journal of Applied Research, Volume-5/Year-10/Issue-6/January,2023, Page No.127 to 130, ISSN:2321-7073
6	Paper: Customer Relationship Management For An Internet Grocery Store	Dogo Rangsang Research Journal, Vol.13, Issue-4, N0.7, April 2023, UGC Care Group I Journal, Page No.131 to 138, ISSN: 2347-7180.
7	Paper: A Initial Study of China Vs. India Macroeconomic Performance	Research Matrix- An International Double Blind Peer Reviewed & Refereed Multidisciplinary Journal of Applied Research, Volume-2/Year-10/Issue-10/January,2023, Page No.147 to 153, ISSN:2321-7073
8	Paper: Distinctiveness and Situatedness of Higher Education Institutions	(ISBN-978-93-95299-07-7)- Sunrise Publishers & Distributors, Jaipur-302021, Rajasthan, First Edition-2022, Page No. 04-14
<b>DR. SANGITABEN C. ACHARYA (ECONOMICS DEPARTMENT)</b>		
9	Relationship Between E-Service Quality and Customer Satisfaction	Jijnasa – A Journal of The History of Ideas And Culture, Volume 38, No.1 UGC
10	The importance of outcome based education (OBE) in a Modern Educational Set Up: A Transformation in Education	(ISBN-978-93-95299-07-7)- Sunrise Publishers & Distributors, Jaipur-302021, Rajasthan, First Edition-2022, Page No. 15 to 26

**PROF. MADHUBEN S. THAKOR (PHYSICAL EDUCATION)**

- |    |  |   |
|----|--|---|
| 11 | Aerobic Training and Physical Fitness                              | Saarth E-Journal of Research                        |
| 12 | Effects of Yogasana on Physical Fitness of College Female Students | Saarth E-Journals of Research, Volume 6, Issue 1/05 |

**PROF. HARSUKHBHAI H. PARMAR (GUJARATI DEPARTMENT)**

- |    |                                  |                              |
|----|----------------------------------|------------------------------|
| 13 | Suresh Joshini Viveechan Srushti | Saarth E-Journal of Research |
|----|----------------------------------|------------------------------|

**DR. RATANBEN P. SOLANKI (PSYCHOLOGY DEPARTMENT)**

- |    |   |   |
|----|---|---|
| 14 | Empower Regional Language of Student in Rural Area. | (ISBN-978-93-95299-07-7)- Sunrise Publishers & Distributors, Jaipur-302021, Rajasthan, First Edition-2022, Page No. 36 to 41  |
| 15 | Vocational Education in India                       | ISSN-2278-4381, SHANTI E-Journal of Research, Most Referred & Peer Reviewed, Multi-Disciplinary E-Journals of Research, June-2023, Vol. 12, ISSUE-46, Page No. 113 to 117 |

**PROF. DHARMENDRABHAI K. CHAUDHARI (PSYCHOLOGY DEPARTMENT)**

- |    |  |  |
|----|--|--|
| 16 | Psychological Study of Women Education and Social Reformation                      | Saarth E-Journal of Research   |
| 17 | Challenges before Education in 21st Century Regarding Intellectual Property Rights | (ISBN-978-93-95299-07-7)- Sunrise Publishers & Distributors, Jaipur-302021, Rajasthan, First Edition-2022, Page No. 27 to 35 |

**LT. PROF. SWATI NIGAM (ENGLISH DEPARTMENT)**

- |    |   |   |
|----|---|---|
| 18 | Issues and Challenges of ICT in Rural Areas | Indian Institute and Teaching Publication           |
| 19 | Information communication and Technology    | Saarth E-Journals of Research, Volume 6, Issue 1/03 |
| 20 | The Role of ICT in English Language         | Saarth E-Journals of Research, Volume 6, Issue 1/02 |

**DR. VARSHABEN C. BRAHMBHATT (GUJARATI DEPARTMENT)**

- |    |   |   |
|----|---|---|
| 21 | Munjaro' ma Nirupit Dalit Shoshan ni Vartao | Saarth E-Journals of Research, Volume 5, Issue 4/18 |
|----|---|---|

**PROF. BHARTIBEN PRAJAPATI (ECONOMICS DEPARTMENT)**

22	A Study of Trends and Patterns of Poverty in India	Atmaj, Academic Research Journal, An International Peer Reviewed of Research Journal, ISSN: 2348-9456, Impact Factor 5.450, Vol. XVIII, Issue-XVII, July-Dec.-2022, Page No. 73 to 82
23	Globalization and Poverty	Research Matrix- An International Double Blind Peer Reviewed & Refereed Multidisciplinary Journal of Applied Research, Volume-2/Year-10/Issue-10/January,2023, Page No.159 to 162, ISSN:2321-7073

**GOVERNANCE, LEADERSHIP AND MANAGEMENT**

- The Management is always co-operative with overall administration of the college which is implemented through the principal and faculty members.
- The management provides excellent infrastructural facilities to faculty and students to progress and development of the college.
- The president including management committee calls the meeting from time to time and discusses the feedback from the students and stakeholders.
- The management sponsors the faculty to participate in national and international gatherings.
- Self-appraisal and academic performance of the staff members is also carried out every year and maintained.

**CURRICULAR ASPECTS**

Smt. M. M. Shah Mahila Arts College, Kadi is being exclusively a girls' college is always sensitive and empathetic towards social problems pertaining to the girls taking admission to the college. Institution following safety and security norms:

- Institution is very particular for the development of the students and some issues discussed in last some years are: Save the girl child, Gender equality, Women empowerment, Gender sensitivity and youth.
- Curricular activities conducted during the year 2022-2023

**CURRICULAR ASPECTS****Table 8. Curricular activities conducted during the year 2022-2023**

COLLEGE ACTIVITIES	NSS
	NCC
	Scope Center
	Anti Ragging Cell
	CWDC
	Sports
	Library Activities
	Cultural Activities
	Career Counseling Cell
	Competitive Examination Guidance Cell
CONSTRUCTIVE ACTIVITIES	Rashtriya Seva Yojana
	Samudayik Seva Dhara
	Yuva Kalyan
	Environment & Disaster Management Education
SAPTDHARA	Gyandhara
	Sarjanatmak Abhivyakti Dhara
	Rang Kala Kaushal Dhara
	Git Sangit Nrutya Dhara
	Natya Dhara

**CELEBRATION OF IMPORTANT DAYS DURING 2022-2023****Table 9. Celebration of important days during 2022-2023**

No.	Events	Beneficiary
1	Voter's day (25/01/23)	For social media awareness students of 18 years & above fill the form for voter card
2	International Yoga Competition (21/06/2022)	To health awareness
3	Ashadhashya Pratham Divas (30/06/2022)	To educate students importance of nature and duty.
4	Independence Day (15/08/2020)	To promotes nationalism & patriotism towards the nation
5	Teachers Day (05/09/2020)	To honor teachers for their accomplishments, & contribution to society as well as to the lives of their students
6	N.S.S. Day (24/09/2022)	To encourage students for social responsibilities.
7	Unity Day-Ekta Divas (31/10/2020)	To reaffirm the solidarity among the people of India
8	Constitution Day (26/11/2020)	To encourage people to inculcate constitutional values in their lives
9	Aids Awareness Programme (01/12/2020)	To reiterate strongly Government's firm commitment to reduce social impact
10	Vivekananda Jayanti (12/0/2021)	To keep ideals of Swami Vivekananda motivating to young people
11	Green Day and Environment Day (17/02/2023)	To environment awareness
12	International Women's Day	To promote peace with women's rights.
13	Birth Anniversary of Subhash Chandra Bose (23/01/23), Dr. Babasaheb Ambedkar (14/04/23), Dr. Sarvapalli Radhakrishnan (teachers' day_05/09/22), Swami Vivekananda (youth day_12/01/23)	To encourage students from life & work these great personalities
14	Republic Day (26/01/23)	Celebrated with great gratification
15	Gandhi Jayanti (02/10/22), Vivekananda Jayanti (12/01/23), Sardar Patel Jayanti (31/08/22)	To inculcate patriotism, struggle for truth, literary sense, culture & heritage of country to students
16	Kargill day (26/07/22)	To commemorates victory & tribute to martyrs

## NUMBER OF FUNCTIONAL MOUS WITH INSTITUTIONS, INDUSTRIES, ETC. DURING THE YEAR 2020-2023

**Table 10. Number of functional MOUs with institutions, industries, etc. during 2020-2023**

<b>Functional MOUS with Organization</b>	<b>Duration</b>	<b>Activities under each MOU</b>
Rotary club Kadi	3 Years	Diploma in Fashion Designing & Tailoring
Gujarat Association For Rural & Urban Development	3 Years	Diploma in Fashion Designing & Tailoring
Shree Gruhini Mahila Audhyogik Sahkari Mandali Ltd.	3 Years	Diploma in Fashion Designing & Tailoring
Adani Skill Development Centre	3 Years	Diploma in Fashion Designing & Tailoring
JCI Kadi Charitable Trust	3 Years	Diploma in Fashion Designing & Tailoring
Adani Skill Development Centre	3 Years	Diploma in Fashion Designing & Tailoring
Invision Software Solution, Gandhinagar	3 Years	Diploma in web Designing & Animation
Incisive web Solution Pvt.Ltd,Gandhinagar	3 Years	Diploma in web Designing & Animation
Sarthak Academy and Computer Education, Kadi	3 Years	Diploma in web Designing & Animation
Adani Skill Development Centre	3 Years	Diploma in web Designing & Animation
Madam Curie Foundation ,Ahmedabad	3 Years	Diploma in Yoga, Fitness & Naturopathy
Rotary Club Kadi	3 Years	Diploma in Yoga, Fitness & Naturopathy
Natural House Mehsana	3 Years	Diploma in Yoga, Fitness & Naturopathy
JCI Kadi Charitable Trust	3 Years	Diploma in Yoga, Fitness & Naturopathy
Patanjali Yog Samiti Kadi Taluka	3 Years	Diploma in Yoga, Fitness & Naturopathy
Adani Skill Development Centre	3 Years	Diploma in Yoga, Fitness & Naturopathy

Functional MOUS with Organization	Duration	Activities under each MOU
Lakulish Yoga University, Ahmedabad	3 Years	Diploma in Yoga, Fitness & Naturopathy
Red & Hair Beauty Academy, Kadi	3 Years	Diploma in Beauty & Wellness
Shivi Beauty Care, Gandhinagar	3 Years	Diploma in Beauty & Wellness
Rotary Club Kadi	3 Years	Diploma in Beauty & Wellness
Adani Skill Development Centre	3 Years	Diploma in Beauty & Wellness
JCI Kadi Charitable Trust	3 Years	Diploma in Beauty & Wellness
Shree Gruhini Mahila Audhyogik Sahkari Mandali Ltd.	3 Years	Diploma in Beauty & Wellness
Samarpan Arts and Commerce College, Gandhinagar	5 Years	Faculty Exchange
Pramukh Swami Science and H. D. Patel Arts College, Kadi	5 Years	Student Exchange
Shri U P Arts, Smt. M. G. Panchal Science & Shri V. L. Shah Commerce College, Pilvai	5 years	Faculty Exchange
S. R. S. Physiotherapy College, Kadi	5 years	Student Exchange
Bhoomi's Beauty Salon, Kadi	3 Years	Diploma in Beauty & Wellness
Jan Kalyan Mahila Vikas Mandal Trust, Kadi	3 Years	Diploma in Fashion Designing & Tailoring
Government Science College, Rajkot	3 Years	Faculty Exchange
Jan Sikshan Sansthan, Kadi	3 Years	Beauty & Wellness, Fashion Designing & Tailoring

## INNOVATIONS AND BEST PRACTICES

- 13 students undertaking courses that include experiential learning through project work/field work/ internships
- 236 students benefited by scholarships and free ships provided by the Government
- 09 students benefited by scholarships, free ships, etc provided by the institution / non-government agencies during the year
- 72 students benefitted by guidance for competitive examinations and career counseling offered by the institution during the year
- Women cell is formed for girl students of college, in which two women teachers of college are included with one girl student representative as a member. This cell provides counseling to girls about girls' physical problems and other issues.

## INNOVATIONS AND BEST PRACTICES

**Table 11. Some major innovations and best practices of college**

Sr. No.	Best Practices	Date
1	Daily Prayer	During Year
2	House Survey & Village Survey in Adopted Villages	29/07/2022
3	Various Competitions Under Har Ghar Tiranga	06/08/2022
4	Cleanliness Campaign	29/12/2022
5	Traffic Awareness	31/12/2022
6	Distribution of Kites, Threads and Chikkiin Slum Area	13/01/2023
7	World Mother Tongue Day	21/02/2023
8	Celebration of International Women's Day	08/03/2023
9	Sapling Plantation in Adopted Villages	During Year
10	Celebration of Azadi Ka Amrit Mahotsav	12/03/23 to 15/03/2023
11	Birth and Death Anniversary of Philantrophers	During Year
12	Elocution Competition on Independence Movement	22/03/2023
13	Read Independence Movement	23/03/2023



## **CAMPUS INFRASTRUCTURE**

College is committed to offer resourceful infrastructure for holistic growth of students. The institution has a well maintained, user friendly and resilient infrastructure conducive to teaching-learning ambience and comprehensive development of students. College believes in the importance of imbibing our cultural values on the young minds. Along with academics and sports, cultural activities play an important role in the holistic development of students. The firefighting system, physiotherapy centre and yoga center is also available in the college. College has policies and procedures for maintenance and utilization of infrastructure and facilities.

- In case of malfunctioning projector and any other equipment the authorized committees take care of the repair.
- Electrical equipments are switched off after use
- Desktops and ACs are maintained and upgraded regularly with prompt approach.
- Library is marked as “Silence Zone”.
- Daily cleaning and dusting of all equipment are done very punctually.
- Sports ground is also maintained by maintenance officer through continuous monitoring.
- Sports equipments are purchased and upgraded as per requirement.
- Cleanliness and sanitation of the entire premises is maintained by maintenance staff through sanitation staff.
- Dustbins are placed at various places to avoid littering and the agency cleans the premises twice a day to maintain hygiene and cleanliness.
- Sanitizers are installed at strategic locations in the premises.

## **ADMINISTRATIVE ROOM**

Administrative room is well- equipped with 3 computers, 2 printers, internet connection, and 2 photocopy machines.

## **AUDITORIUM**

A spacious auditorium is air conditioned with 250 seating capacity to enhance the quality of education. It has giant screen for projector with Dolby sound system.

## **CLASS ROOM AND STAFF ROOM**

College has 01 staffroom for the faculty members and 08 classrooms well equipped with CCTV cameras and overhead projectors to enhance the students’ skill as systematically. The classrooms are properly ventilated with all the basic amenities for strengthening academic discourse. The room receives optimal natural light.

## **PSYCHOLOGY LABORATORY**

A psychological laboratory is equipped for two purposes. Firstly, for the recording of behavior and for the monitoring of mental and emotional states; secondly, for the systematic control of environmental and individual factors which determine human mental and emotional states.

**CULTURAL HALL OR SEMINAR HALL**

A cultural hall or seminar hall is provided to students for showcasing their talents. The cultural activities enhance the confidence level of the students thereby allowing them to perform better.

**CONFERENCE ROOM**

College has one conference room where employees and teams come together to discuss ideas and collaborate on projects.

**MULTIPURPOSE ROOM**

Two well designed multifunctional rooms can help to uncluttered other rooms and make the best use of available space.

**COMPUTER LAB (LANGUAGE LAB)**

The institution has one computer lab with 46 sets of computers along with antivirus system which facilitates the students to fine tune their communication skills.

**SPORTS ROOM AND BADMINTON COURT**

Various sports programme such as Kabbaddi, Kho-Kho, Volley Ball, Hand ball, 200 meter track etc. outdoor sports activities are made available for students. Indoor games facility for Chess, Table-Tennis and Carom also available for students.

**NSS ROOM**

College has NSS room to provide hands on experience to young students in delivering community service.

**NCC ROOM**

College has NCC room is to developing character, comradeship, discipline, a secular outlook, the spirit of adventure and ideals of selfless service amongst young students.

**IQAC ROOM**

A separate IQAC room is also available in the college. This room facilitates with computer sets and necessary furniture like tables, chairs, and iron vaults.

**GIRLS ROOM**

A spacious room is available in the college which comprises of a cot to rest in case of an emergency and other necessary requirements for the girls.

**GYM ROOM**

The physical fitness room is available with all latest equipments in the college specifically designated for exercise, fitness training, and physical wellness activities to the students.

**PRINCIPAL ROOM**

There is a principal room to maintain of permanent records of students and has internet connections (bandwidth 50 MBPS) with Wi-Fi Facilities.

## GARDEN

The college has ample garden area at the entrance of the college which includes around 178 plants with 52 of different varieties of trees. Moreover, college building area comprises garden at the front side, middle side and at the back side. For the protection the college has built a wall. Garden also comprises some medical and important plants with their red conservation aspect. College garden is day to day maintained by Mr. Chandrashekhar Kori.

## LIBRARY

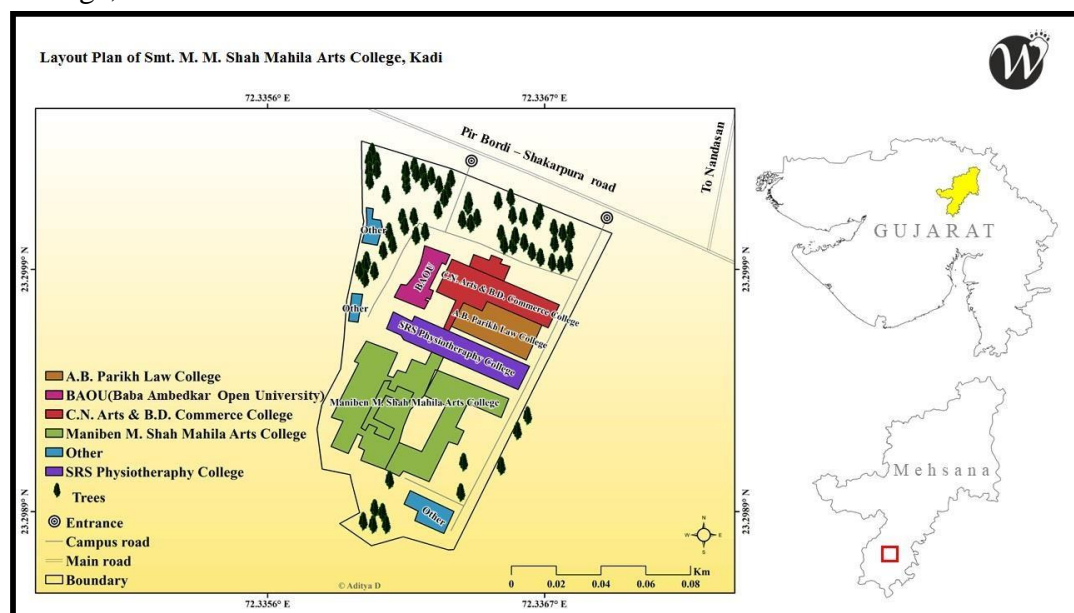
College library has internet broadband plan and WIFI of 50 mbps speed. Additionally, college library is fully computerized and has good collection of textbooks and Journals (table 7). The library is semi-automated through software SOUL 2.0 and library functioning is partially automated. Library has special corner for books on competitive examination like GPSC, UPSC, NET, and SET.

**Table 12. Library services provides to students during 2022-2023**

Library Services	Existing	Newly Added	Total
Text Books	14257	408	14665
Reference Books	235	00	235
Journals	24	00	24
CD & Video	175	Nil	175

## TOTAL CAMPUS AREA & COLLEGE BUILDING SPREAD AREA

The entire campus is spread in total 10.5 acres from which 1400 m<sup>2</sup> areas is used for buildings and infrastructure. Following diagram is shows campus layout of Smt. M. M. Shah Mahila Arts College, Kadi.



**Figure 3. CAMPUS LAYOUT**

## **CHAPTER 2**

### **PRE-AUDIT STAGE**

#### **SCOPE AND GOALS OF GREEN AUDITING**

A clean and healthy environment aids in effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues. Green Audit is the most efficient and ecological way to manage environmental problems. Green audit means assessing environmental performance. It is a systematic, documented, periodic, and objective review by regulated entities of facility operations and practices related to meeting environmental requirements. It is otherwise the systematic examination of the interactions between any operation and its surroundings. This includes all emissions to air; land and water; legal constraints; the effects on the neighboring community; landscape and ecology; the public's perception of the operating company in the local area. Green audit does not stop all compliance with legislation. Nor it is a 'green washing' public relations exercise. Rather it is a total strategic approach to the organization's activities. It is a kind of professional care which is the responsibility of each individual who is the part of economic, financial, social, environmental factor. It is necessary to conduct green audit in college campus because students become aware of the green audit, its advantages to save the planet and they become good citizen of our country. In accordance with the evaluation plan of Smt. M. M. Shah Mahila Arts College, Kadi for 2022-23, the Green Audit of the college conducted in April 2023.

A very simple indigenized system has been devised to monitor the environmental performance of Smt. M. M. Shah Mahila Arts College, Kadi. It comes with a series of questions to be answered on a regular basis. This innovative scheme is user friendly and totally voluntary. The aim of this is to help the institution to set environmental examples for the community, and to educate the young learners. Thus Green audit becomes necessary at the college level.

#### **BENEFITS OF GREEN AUDITING**

- More efficient resource management
- To provide basis for improved sustainability
- To create green campus
- To enable waste management through reduction of waste generation, solid and liquid waste and water recycling
- To create plastic free campus and evolve health consciousness
- Point out the prevailing and forth coming complications
- Authenticate conformity with the implemented laws
- Enhance the alertness for environmental guidelines and duties
- Impart environmental education through systematic environmental management approach and improving environmental standards
- Benchmarking for environmental protection initiatives

- Financial savings through a reduction in resource use
- Development of ownership, personal and social responsibility for the college and its environment
- Enhancement of college profile
- Developing an environmental ethic and value systems in youngsters
- Green auditing should become a valuable tool in the management and monitoring of environmental and sustainable development programs of the college
- Developing the organization's environmental strategy: Enabling management to develop its environmental strategy for moving towards a greener corporate and performance culture.

## **TARGET AREAS OF GREEN AUDITING**

Green audit forms part of a resource management process. Although they are individual events, the real value of green audits is the fact that they are carried out, at defined intervals, and their results can illustrate improvement or changeover time. Eco-campus concept mainly focuses on the efficient use of energy and water, to minimize waste generation or pollution and also economic efficiency. All these indicators are assessed in process of green auditing of educational institute. Eco-campus focuses on the reduction of contribution to emissions, procures a cost effective and secure supply of energy, encourages and enhances energy use conservation, promotes personal action, reduce the institute's energy and water consumption, reduce wastes to landfill, and integrate environmental considerations into all contracts and services considered to have significant environmental impacts. Target areas included in this green auditing are water, energy, waste, green campus and carbon footprint.

## **AUDITING FOR WATER MANAGEMENT**

Water is a natural resource; all living matters depend on water. While freely available in many natural environments, in human settlements potable water is less readily available. We need to use water wisely to ensure that drinkable water is available for all, now and in the future. A small drip from a leaky tap can waste more than 180 liters of water to a day; that is a lot of water to waste -enough to flush the toilet eight times. Aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices. Water auditing is conducted for the evaluation of facilities of raw water intake and determining the facilities for water treatment and reuse. The concerned audit or investigates the relevant method that can be adopted and implemented to balance the demand and supply of water. It is therefore essential that any environmentally responsible institution examine its water use practices.

## **A) AUDITING FOR ENERGY MANAGEMENT**

Energy cannot be seen, but we know it is there because we can see its effects in the forms of heat, light and power. This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances, and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. Energy auditing deals with the conservation and methods to reduce its consumption related to environmental

degradation. It is therefore essential that any environmentally responsible institution examine its energy use practices.

### **B) AUDITING FOR WASTE MANAGEMENT**

Pollution from waste is aesthetically unpleasing and results in large amounts of litter in our communities which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals. This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Solid waste can be divided into two categories: general waste and hazardous waste. General wastes include what is usually thrown away in homes and schools such as garbage, paper, tins and glass bottles. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals and petrol. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies, and produce green house gases contributing to global climate change. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reuse. Thus the minimization of solid waste is essential to a sustainable college. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems. It is therefore essential that any environmentally responsible institution examine its waste processing practices.

### **C) AUDITING FOR GREEN CAMPUS MANAGEMENT**

Unfortunately, biodiversity is facing serious threats from habitat loss, pollution, over consumption and invasive species. Species are disappearing at an alarming rate and each loss affects nature's delicate balance and our quality of life. Without this variability in the living world, ecological systems and functions would break down, with detrimental consequences for all forms of life. Newly planted and existing trees decrease the amount of carbon dioxide in the atmosphere. Trees play an important ecological role within the urban environment, as well as support improved public health and provide aesthetic benefits to cities. In one year, a single mature tree will absorb up to 48 pounds ( $4.535 \times 10^{-3}$  tones) of carbon dioxide from the atmosphere, and release it as oxygen. The amount of oxygen that a singletree produces is enough to provide one day's supply of oxygen for people. So while you are busy studying and working on earning those good grades, all the trees on campus arealso working hard to make the air cleaner for us. Trees can impact one mental health as well; studies have shown that trees greatly reduce stress, which a huge deal is considering many students are under some amount of stress.

### **D) AUDITING FOR CARBON FOOTPRINT**

Usage of fossil fuel-based vehicles impacts on the environment through the emission of greenhouse gases into the atmosphere. The most common greenhouse gases are carbon dioxide, water vapor, methane, nitrous oxide and ozone. Of all the green house gases, carbon dioxide is the most prominent greenhouse gas, comprising 402 ppm of the Earth's atmosphere. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions. An important aspect of doing an audit is to be able to measure the impact so that one can determine better ways to manage the impact. In addition to the audits of water, waste, energy

and biodiversity aids to determine what our carbon footprint is, based on the amount of carbon emissions created. It is necessary to know how much the organization is contributing towards sustainable development. It is therefore essential that any environmentally responsible institution examine its carbon footprint.

## **METHODOLOGY OF GREEN AUDITING**

The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. The criteria, methods and recommendations used in the audit were based on the identified risks. The methodology includes: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the document, interviewing responsible persons and data analysis, measurements and recommendations. The methodology adopted for this audit was a three step process comprising of: A) Data collection B) Data analysis and recommendation

### **A) DATACOLLECTION**

In preliminary data collection phase, exhaustive data collection was performed using different tools such as observation, survey communicating with responsible persons and measurements. Following steps were taken for data collection:

- The team went to each department, centers, library, canteen etc.
- Data about the general information was collected by observation and interview.
- The power consumption of appliances was recorded by taking an average value in some cases.

### **B) DATA ANALYSIS AND RECOMMENDATION**

On the basis of results of data analysis and observations, some steps for reducing power and water consumption were recommended. Proper treatments for waste were also suggested. Use of fossil fuels has to be reduced for the sake of community health. The above target areas particular to the college was evaluated through questionnaire for data collection. Five categories of questionnaires were distributed which was given in survey forms. The formats of the same are given below.



## CHAPTER 3

### POST AUDIT STAGE

The base of any green audit is that its findings are supported by documents and verifiable information. The audit process seeks, on a sampled basis, to track past actions, activities, events, and procedures to ensure that they are carried out according to systems requirements and in the correct manner. Green audits form a part of a process. Although they are individual events, the real value of green audits is the fact that they are carried out, at defined intervals, and their results can illustrate improvement or change over time. Although green audits are carried out using policies, procedures, documented systems and objectives as a test, there is always an element of subjectivity in an audit. The essence of any green audit is to find out how well the environmental management and environmental equipment are performing. Each of these components is crucial in ensuring that the campus environmental performance meets the goals set in its green policy. The individual functioning and the success of integration will all play a role in the degree of success or failure of the campus environmental performance.

### KEY FINDINGS AND OBSERVATIONS

#### A) AUDIT FOR WATER MANAGEMENT

1. Main water uses in the campus: washroom, gardening, cleaning, drinking, washing and office uses.
2. Separate bore, storage water and water tanks are made for water resource in the campus.
3. College store water through 02 water tanks.
4. Water wastage mainly during urinals and toilets.
5. Water wastage can be prevented by wisely flush in toilets.
6. Reduce the usage of water is foremost way to reduce amount of water used in college.
7. College does not have chemical laboratories.
8. College has no agriculture field.
9. College campus doesn't have hostel and canteen premises.
10. There is no water meter box in the college.
11. Water management plan: bore well (figure: 4)
12. Number of water coolers: 01 and approximately 50L water used per day.
13. Number of bathrooms: 03 and currently not in use.
14. Number of toilets and urinals: 10 and approximately 15 L water used per day.
15. Number of water fountains: none
16. Number of water taps: 25
17. Every even days of the month the gardens are watered and approximately 50L water used for garden purpose.
18. No water treatment system in place.
19. Leaky taps; waterless toilets; water fountain: None



**Figure 4. Bore well system in college campus**



20. There are signs reminding people to turn off the water.
21. Drip irrigation system used for watering the plants in garden.
22. Rain water harvesting technique will be adopted which can save more water in the college.
23. Water used adequately and maintained through this method college saves water wastage.
24. Approx. 95 L water use per day in the college which is detailed in below table 13.
25. Following table 13 shows overall utilization of water in the college:

**Table 13. Overall utilization of water in the college**

Sections	Water Use/ Day (L)
Urinals and toilets	15
Garden	30
Bathrooms	Not Available
Water cooler	50
Total	95

**B) AUDIT FOR ENERGY MANAGEMENT**

1. College uses LED bulb, computer, Xerox machine, printer, and submersible water pump.
2. Electricity amount for the previous year was Rs. 9,743/-
3. LPG cylinders are available in college.
4. Alternative source of energy like solar energy adopted by the college as energy conservation (figure 5).
5. Following table 14 shows calculation of energy for major electrical appliances used in college campus.

**Figure 5. Solar system in college campus****Table 14. Calculation of energy for electrical appliances used in college campus**

Name of Appliances	No. of appliances	General Power consumption (watt)	Power consumption (KW=W/1000)	Usage/day(hours)	Average kWh /day	Average kWh /month
Fan	307	14	1.87	06	11.3	774
LED bulb	180	11	0.11	05	0.6	297
Tube light	86	25	2.15	06	12.9	387
Computer	46	60	2.76	05	13.8	414
Printer	04	30	0.12	07	0.8	25
Photocopy machine	02	83	0.16	06	1.0	30
CCTV camera	24	02	0.05	24	1.2	35
TV	01	60	0.06	07	0.4	13
Projector	10	50	0.5	04	2.0	60
Speaker	02	200	0.4	03	1.2	36
A.C.	03	1000	03	05	15	450
Total	665	3260	1052.98	78	82132.4	5072886

6. Following figure 6 shows average of energy for major electrical appliances used in college campus.

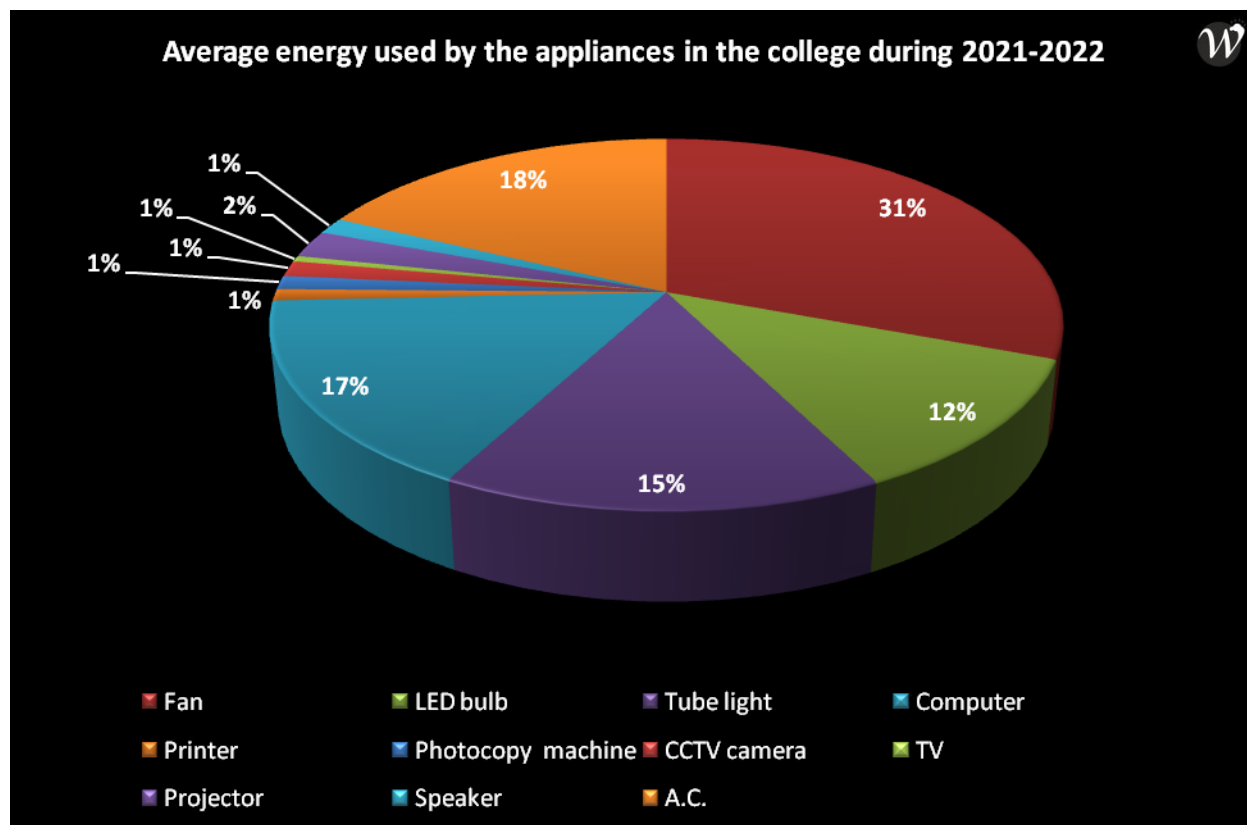


Figure 6. Average energy used by electrical appliances in college during 2022-2023

### C) AUDIT FOR WASTE MANAGEMENT

1. Public convenience, sewer linear, bus stand, petrol pump are found near from the college campus area.
2. College generates solid wastes and some liquid wastes.
3. Different wastes such as dry wastes (solid portion of material such as glass bottles, crockeries, plastic containers, metals and radioactive wastes, etc.) and liquid wastes (medical wastes, sanitary napkin wastes, etc.) collected in different dustbins (figure 7).
4. Dry wastes such as garden wastes dumped in the fully automated waste composter machine (M.O.C. Stainless steel) with the capacity of 05kg per day to produce compost and other wastes are regularly collected by Kadi municipal trucks. So, college achieves zero garbage.
5. Electronic wastes are generated in negligible amount.
6. Other wastes such as hazardous chemicals and radioactive wastes does not generate as this institution conducting Arts branch only.
7. College spreads the message of recycling and waste wealth programmes such as rallies, drawing competition, are organized on cleanliness theme to others in the community through celebration of cleanliness drive and hoardings activities done by NSS and NCC students the college (annexure 1).
8. Reduce, Recycle, Reuse and refuse are some ways to achieve zero garbage in the college and the college is trying to accomplish to fulfill these things.
9. Following facilities are available in the college campus



**Figure 7. Dustbin for waste disposal**

**Table 15. Facilities available in the college campus**

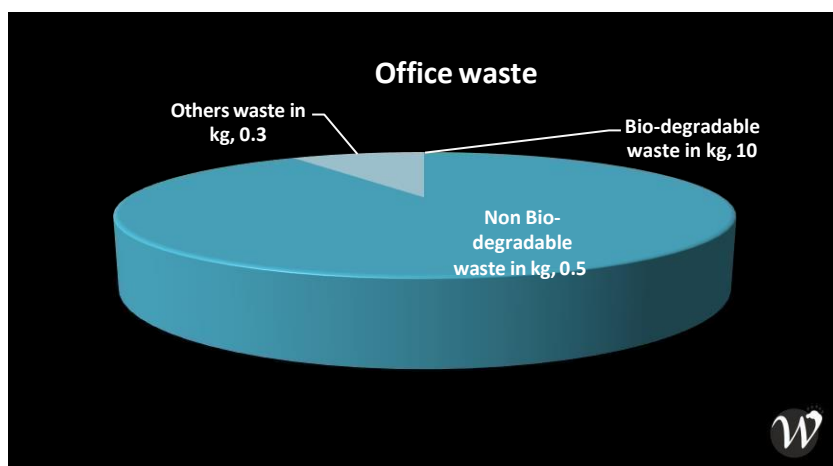
Facility	Number of facility	Facility	Number of facility
Garden area	04	Canteen	--
Playground area	01	Parking area	03
Kitchen	01	Classrooms	08
Toilets	10	Office room	01
Garbage dump	01	Library	01
Language lab	01	Auditorium	01
Psychology lab	01	Boys and Girls hostel	--

10. Following table shows total strength in the college during 2022-2023.

**Table 16. Total strength in the college during 2022-2023**

Students	No. of students	No. of teachers	No. non teaching staff
Male	-	05	04
Female	512	11	03
Total	512	16	07

11. Approximate office waste generated per day (in kilograms):



**Figure 8. Approximate office waste generated per day during 2022-2023**

12. Different types of waste generated in the college and their disposal.

**Table 17. Different types of wastes and their disposal method**

Types of waste	Particulars	Disposal method
E-Wastes	Computers, electrical and electronic parts	Keep separate in store room
Plastic wastes	Plastic wastes as Refill, Plastic water bottles, etc.	Negligible amount generate
Solid wastes	Damaged furniture, paper waste, paper plates, etc.	Fully automatic organic waste composter machine
Domestic wastes	Sanitary napkin wastes	Incinerator Machine
Wastewater	Washing, urinals, bathrooms	Drainage

**D) AUDIT FOR GREEN CAMPUS MANAGEMENT**

1. There are total 04 gardens full-fledged in approximately 120.00 sq.mt area in the college building. Proper care is taken to maintain trees, plants and garden.
2. Plantation activity done by college campus which is enclosed in annexure 6.
3. Campus landscaping with total 178 plants such as *Acacia nilotica*, *Alstonia scholaris*, *Azadirachta indica*, *Monoon longifolium*, *Moringa oleifera*, *Tabebuia rosea* and many more trees (figure 9).
4. 19 least concern, 01 endangered 11 not extinct and 1 data deficient tree species are identified in the college campus (table 18).
5. Among tall trees, there are 52 tall tree species, 24 ornamental garden plants (table 19) and 11 medicinal tree species (table 20) were identified which have different usages such as social forestry, agriculture, medicinal, and timber yielding plants (figure 10).
6. College garden is maintained by Mr. Chandrashekhar Kori.
7. College has drip irrigation system to nourish the plants of garden.
8. The college has a composter machine, M.O.C. Stainless steel machine Insta-05. Dry leaves wastes from the garden are collected and are placed in the composting unit and generated compost then used as manure in the garden of campus.
9. College actively organized green initiatives which are listed below.

**➤ DEPLOYMENT OF SOLAR ARRAYS (08/07/22)**

As a renewable source of power, solar arrays (solar panel) installed in college with the capacity of 10 KV on the date of 08/07/22 as solar energy has an important role in reducing greenhouse gas emissions and mitigating climate change, which is critical to protecting humans, wildlife, and ecosystems (annexure 2). Solar energy can also improve air quality and reduce water use from energy production.

**➤ SWACHHATA ABHIYAN (29/12/2022)**

College organized Swachhata Bharat Abhiyan and developed a committee which plays a significant role in the campus premises, to make campus neat, clean and dust free (annexure 3). The programme includes elimination of open defecation, conversion of unsanitary toilets to pour flush toilets, municipal solid waste management and bringing about a behavioral change in people regarding healthy sanitation practices.

**➤ ROAD AWARENESS (31/12/2022)**

Road safety is of prime importance as road accidents are among the biggest causes of deaths in the country. With the number of vehicles on our roads increasing with every passing hour, it's of vital importance for everyone to have traffic awareness and understand and respect all the road safety rules in India.

**➤ NATIONAL CLEANLINESS DAY (02/10/2021 & 02/10/2022)**

The college celebrated National Cleanliness Day to commemorate the death anniversary of Mahatma Gandhi every year (annexure 3). This responsibility for environmental cleanliness, calls to maintain high standards of cleanliness in our homes, workplace, road/streets and public places.

➤ **INTERNATIONAL YOGA DAY (21/06/2022)**

College celebrated International Yoga Day on 21/06/22 as yoga and health awareness with the purpose to cultivate discernment, awareness, self-regulation and higher consciousness in the individual (annexure 4).

➤ **HEALTH CHECKUP CAMP (23/05/2023)**

College organizes medical camp to provide initial care to students in life-threatening conditions which reflect the unique strengths and goals of medical ethics (annexure 5).

➤ **PLASTICS FREE AND SAVE NATURE (05/06/2022)**

Plastic hatavo activity organized by college to establishes environment-friendly plastic waste disposal solutions. In the process it seeks to ban the use of plastic bags and plastic products, and reduce plastic littering across the campus.

➤ **SAPLING PLANTATION (15/07/2022 & 08/08/2022)**

Under the Tree Adaptation Abhiyan, college organized sapling plantation programme every year (annexure 6). Sapling plantation creates awareness of green earth and eco-friendly culture. Green cover is significant because it is linked to our basic need for good food to eat and clean air to breathe. Aside from these necessities, they preserve biodiversity, conserve water, preserve soil, and control climate, among other things.

➤ **ENVIRONMENTAL CONSCIOUSNESS AND SUSTAINABLE ACTIVITY  
(17/02/21)**

To motivate the students for environmental consciousness activities and to create awareness towards the nature and environment in which we live, college organizes Environmental Consciousness and Promotion of Sustainable Environment activity. In order to sustain the clean and green environment of the college emblazons balance between utilization and transformation along with disposal of wastes has to be maintained.

## TALL TREES FOUND IN THE SMT. M. M. SHAH MAHILA ARTS COLLEGE, KADI



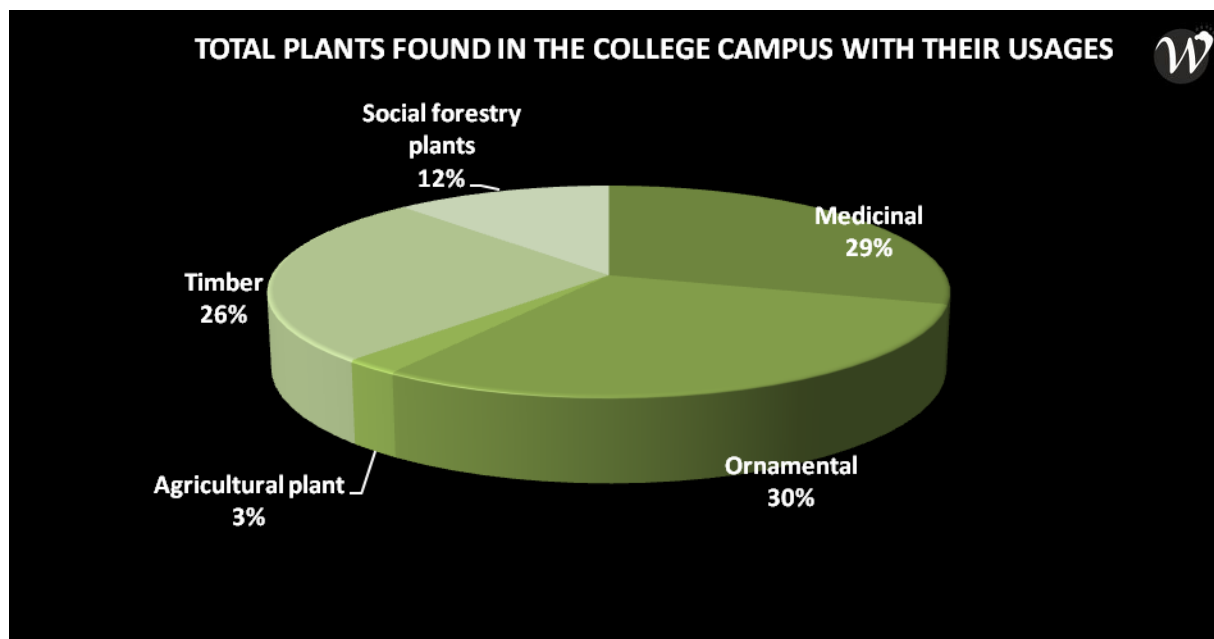
**Figure 9. Number of trees found in the Smt. M. M. Shah Mahila Arts College, Kadi**

Above figure shows that college harbors varieties of tall trees such as *Acacia nilotica*, *Alstonia scholaris*, *Azadirachta indica*, *Monoon longifolium*, *Moringa oleifera*, *Tabebuia rosea* and many more.

Among these trees, *Azadirachta indica*, *Plumeria obtuse*, *Tecoma stans* and *Casurina equisetifolia* were found with maximum number of trees species in the college campus. Least number of tree species includes *Tabebuia rosea*, *Syzygium cumini*, *Sapindus mukorossi*, *Phyllanthus emblica*, *Murraya koenigii*, *Mangifrea pentandra*, *Ficus religiosa* and *Alianthus excelsa*.



## TOTAL PLANTS FOUND IN THE COLLEGE CAMPUS WITH THEIR USAGES



**Figure 10. Total plants found in the college campus with their usages**

Above figure shows that Campus landscaping with total 178 plants which have different usages such as social forestry, agriculture, medicinal, and timber yielding plants.

## CAMPUS WITH THEIR RED CONSERVATION STATUS

**Table 18. Important trees found in the college campus with their red conservation status**

In this table, Least Concern (LC) tree species means is a species that has been categorized by the International Union for Conservation of Nature (IUCN) as evaluated as not being a focus of species conservation because the specific species is still plentiful in the wild. An endangered (EN) species is a type of organism that is threatened by extinction. Species become endangered for two main reasons: loss of habitat and loss of genetic variation. The conservation status of a group of a species Not Extinct indicates whether the group still exists and how likely the group is to become extinct in the near future. A data deficient (DD) species is one which has been categorized by the IUCN as offering insufficient information for a proper assessment of conservation status to be made.

Sr. No.	Status of trees	Available trees in the college campus
1	Least concerned	<i>Acacia nilotica</i>
2		<i>Albizia labbeck</i>
3		<i>Alstonia scholaris</i>
4		<i>Annona reticulata</i>
5		<i>Azadirachta indica</i>
6		<i>Caryota urens</i>
7		<i>Cascabela thevetia</i>
8		<i>Delonix regia</i>
9		<i>Justica adhatoda</i>
10		<i>Kigelia pinnata</i>
11		<i>Moringa oleifera</i>
12		<i>Murraya koenigii</i>
13		<i>Nerium indicum</i>
14		<i>Phyllanthus emblica</i>
15		<i>Plumeria obtusa</i>
16		<i>Psidium guajava</i>

Sr. No.	Status of trees	Available trees in the college campus
17		<i>Sapindus mukorossi</i>
18		<i>Syzygium cumini</i>
19		<i>Tecoma stans</i>
20	Not Extinct	<i>Alanthus excelsa</i>
21		<i>Albizia chinensis</i>
22		<i>Cassia siamea</i>
23		<i>Casuarina equisetifolia</i>
24		<i>Ceiba pentandra</i>
25		<i>Citrus limon</i>
27		<i>Mimusops elengi</i>
28		<i>Monoon longifolium</i>
29		<i>Ocimum sanctum</i>
30		<i>Tabebuia rosea</i>
31	Data Deficient	<i>Mangifera pentandra</i>
32	Endangered	<i>Borassus flabellifer</i>

## ORNAMENTAL PLANTS AVAILABLE IN THE COLLEGE

**Table 19. Ornamental plants available in the college**

Ornamental plants don't just improve the aesthetic appeal of the garden property but they also act as wind barriers providing great quality of space. They provide habitat for many organisms and also clean up pollutants from nearby pollinating plants.

Sr. No.	Common name	Scientific name
1	Bili	<i>Aegle marmelos</i>
2	Golden Trumpet	<i>Allamandu cathartica</i>
3	Saptparni	<i>Alstonia scholaris</i>
4	Indian hemp/ Wild cotton	<i>Apocynum cannabinum</i>
5	Bamboo	<i>Bambusa vulgaris</i>
6	Pili Karen	<i>Cascabela thevetia</i>
7	Snake Plant	<i>Dracaena trifasciata</i>
8	Rubber fig	<i>Ficus elastica</i>
9	Kamrup/Indian Laurel	<i>Ficus microcarpa</i>
10	Ixora/ West Indian Jasmine	<i>Ixora coccinea</i>
11	Savin/Thuja	<i>Janiperussabina</i>
12	Jasmine	<i>Jasminum officinale</i>
13	Wild Tamarind	<i>Leucaena leucocephala</i>
14	Lili	<i>Lilium candium</i>
15	Rayan	<i>Manilkara hexandra</i>
16	Chiku	<i>Manilkara zapota</i>
17	Borsalli	<i>Mimusops elengi</i>
18	Kamini/ Orange Jasmine	<i>Murraya paniculata</i>
19	Lal Karen	<i>Nerium indicum</i>
20	Asopalav	<i>Polyalthia Longifolia</i>

Sr. No.	Common name	Scientific name
21	Golden Pseuderanthem	<i>Pseuderanthemum maculatum</i>
22	Dadam	<i>Punica granatum</i>
23	Vasant Rani/Salvador Pink Trumpet	<i>Tabebuia rosea</i>
24	Pili Limdi	<i>Tecoma stans</i>

## MEDICINAL PLANTS AVAILABLE IN THE COLLEGE

**Table 20. Medicinal plants available in the college**

Medicinal plants, also called medicinal herbs, have been discovered and used in traditional medicine practices since prehistoric times. Plants synthesize hundreds of chemical compounds for various functions, including defense and protection against insects, fungi, diseases, and herbivorous mammals.

Sr. No.	Common name	Scientific name
1	Garlic weed	<i>Petiveria alliacea</i>
2	Basil	<i>Ocimum basilicum</i>
3	Tulsi	<i>Ocimum tenuiflorum</i>
4	Ardusi	<i>Adhatoda vasica</i>
5	chaliponga	<i>Diplopterys cabrerana</i>
6	Ashwagandha	<i>Withania somnifera</i>
7	Kesudo	<i>Butea monosperma</i>
8	Jasud	<i>Hibiscus rosa-sinenis</i>
9	Barmasi	<i>Catharanthus roseus</i>
10	Limdo	<i>Azadirachta indica</i>
11	Sargavo	<i>Moringa oleifera</i>

## AUDIT FOR CARBON FOOTPRINT

According to U.S. EIA (Energy Information Administration), greenhouse gases are gases that keep heat in the earth's atmosphere. Although greenhouse gases do occur naturally, majorly human activity contributes a great deal to greenhouse gas emissions. The carbon footprint or the impact on the environment from the Smt. M. M. Shah Mahila Arts College, Kadi campus measures the greenhouse gases that campus responsible for creating.

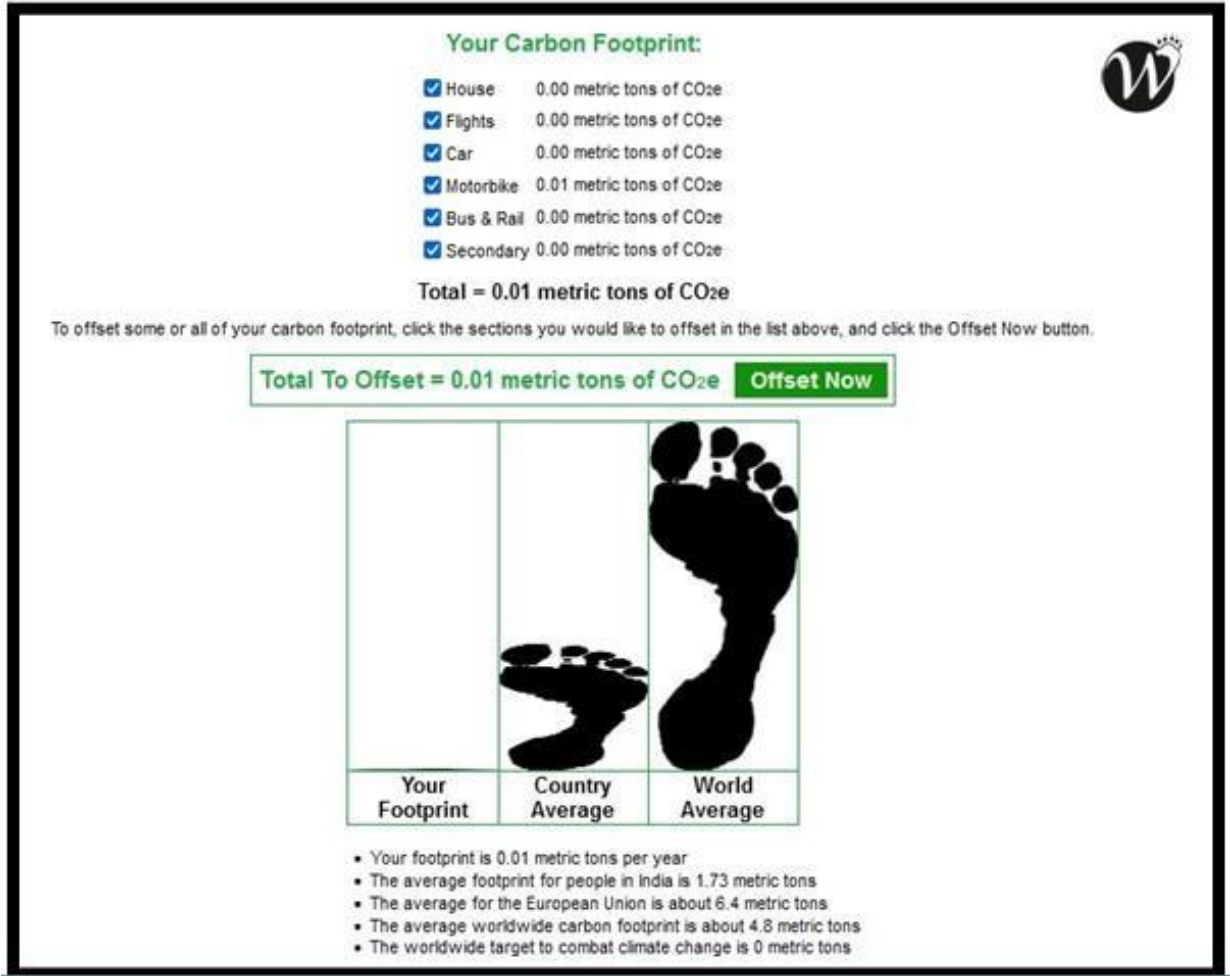
## CARBON FOOTPRINT ANALYSIS

The institution takes following steps for the betterment of environment:

1. The institution tries to maintain eco- friendly atmosphere.
2. There is restricted entry of automobiles in the collegecampus.
3. There are pedestrian friendly pathways available in thecollege.
4. Diameter at breast height and approximate age of the trees were measured to estimate the potentiality of carbon sequestration for the campus trees which can be seen in figure 11.
5. Total carbon sequestered by trees of campus was 95.24 t/year in which highest potentiality of carbon sequestration was observed in *Ailanthus excelsa* (6.27 t/year) and lowest potentiality of carbon sequestration was observed in *Alstonia scholaris* (2.09 t/year) during the study sample.
6. There is a carbon pooling system in the campus which minimizes the atmospheric carbon emission.
7. Total number of vehicles used by the studentsof the college:45
8. Total number of vehicles used by the stakeholders of the college : 07
9. Number of cycles used: 10
10. Number of two wheelers used: 25
11. Average distance travelled: 25 km
12. Average quantity of fuel used: 70Ltr
13. Number of cars used by faculties: 10
14. Number of cars used by visitors: 15
15. Approx distance travelled : 20 km
16. Approx quantity of fuel used : 1 Ltr
17. 400 persons using public transportation and average distance is 35 km.
18. 5 fire extinguisher sets to control fire.
19. College has 1 generator and it is used only when it's required.
20. Environment and Disaster Management subject is included in the curriculum will help the youth understand how to anticipate, absorb and adapt to such events.
21. College has initiative for carbon accounting and following figure shows carbon foot print calculation and comparison with country level and world level for the year of 2022-2023 (figure 12).



**Figure 11. Diameter is estimated to measure carbon sequestration from trees available in the collegecampus**



**Figure 12. Carbon footprint of Smt. M. M. Shah Mahila Arts College, Kadi campus tocompare country and world level for the 2022-2023**

## **CHAPTER 4**

### **FINDINGS**

#### **PREPARATION OF ACTION PLAN**

Policies referring to college management and approaches towards the use of resources need to be considered. The college should have a green policy/environmental policy for its sustainable development. The environmental policy formulated by the management of the college should be implemented meticulously. The college should have a policy on awareness training programs and college also should have a procurement policy.

#### **FOLLOW-UP ACTION AND PLANS**

Green Audits are exercises which generate considerable quantities of valuable management information. The time, effort and cost involved in this exercise are often considerable and in order to be able to justify this expenditure. It is important to ensure that findings and recommendations of the audit are considered at the correct level within the campus and that action plans and implementation programs result from the findings. Audit follow up is part of the wider process of continuous improvement. Without follow-up, audit becomes an isolated event which soon becomes forgotten in the pressures of management priorities and passing of time.

#### **ENVIRONMENTAL EDUCATION**

The following environmental education program may be implemented in the college before the next green audit:-

- Training programs in solid waste management, liquid waste management, setting up of separate medicinal plant nursery, water management, vegetable cultivation, and more tree plantation programme should be done at regular intervals.
- Increase the number of display boards on environmental awareness such as save water, save electricity, no wastage of food/water, no smoking, switch off light and fan after use, plastic free campus etc.
- Activate and raise the environmental clubs.
- Set up model for rainwater pits, vegetable garden, paddy fields etc. to give students first-hand experience with nature.
- Awareness on carbon consumption.
- The carbon consumption awareness programs on carbon emission at individual as well as social level will help to avoid air and noise pollution in the campus due to vehicles.



## **CONCLUSION**

The green audit assists in the process of testing performance in the environmental arena and is fast becoming an indispensable aid to decision making in a college. The green audit reports assist in the process of attaining an eco-friendly approach to the sustainable development of the college. Hope that the results presented in the green auditing report will serve as a guide for educating the college community on the existing environment related practices and resource usage at the college as well as spawn new activities and innovative practices. It has been shown frequently that the practical suggestions, alternatives, and observations that have resulted from audits have added positive value to management of the campus. An outside view, perspective and opinion often help staffs who have been too close to problems or methods to see the value of alternative approaches. A green audit report is a very powerful and valuable communications tool to use when working with various students who need to be convinced that things are running smoothly and systems are coping with natural changes and modifications that occur.

## **CURRENT SAVING METHODS ADAPTED IN THE COLLEGE**

- Maintain appliances and replace old appliances.
- Energy saving through the replacement of incandescent bulbs and CFL lamps could be a good option.
- Awareness programs for the students to save energy, save water may also increase sustainability in the utilization of various energy and water sources.

## **LIST OF ECO-FRIENDLY ACTIVITIES GOING ON IN THE CAMPUS**

- Planting and caring of trees in and around the campus.
- Timely disposal of wastes from the campus.
- Celebration of important days like Plantation of trees and ban on Plastics, Celebration of National Cleanliness Day, Yoga and Health Awareness etc. with great importance.
- Management has decided to adopt green protocol. As in this protocol, college follows a scientific way of disposal through eliminating waste generation mitigation of waste, grading of waste.
- Distribution of medicinal plant saplings among students.

## **CONSOLIDATION OF AUDIT FINDINGS**

We hope that students will have developed a greater appreciation and understanding of the impact of their actions on the environment. They have successfully been able to determine the impacts on the environment through the various auditing exercises. Participating in this green auditing procedure they have gained knowledge about the need of sustainability of the college campus. It will create awareness on the use of the Earth's resources in their home, college, local community and beyond.

**MAJOR AUDIT OBSERVATIONS****WATER AUDIT**

- Rain water harvesting system will be adopted in the college.
- Automatic switching system installed to stop overhead tank filling.

**ENERGY AUDIT**

- The older appliances and non-energy efficient equipment are replaced with new energy efficient equipment.
- Awareness among the students and staff on energy conservation is created by workshops and seminars.
- College follows switching off all the electrical appliances when they are not in use.

**WASTE AUDIT**

The staff room and office are frequently sanitized and sanitizers are made available at many points in the College.

**A. SOLID WASTE MANAGEMENT:**

- Campus is plastic free zone as college organizes campaign for “Ban on Plastic” every year.
- Swachh Bharath slogans are also displayed in the college.
- Solid waste (garden waste) and liquid waste are managed by blue and green dustbins in the college.
- The college has proper communication with the local body for regular collection of waste from the campus.
- Waste bins in the class rooms, veranda, canteen and campus are adequate.

**B. E-WASTE MANAGEMENT:**

- The non functional computers, equipments and its peripherals are safely disposed.
- The cartridge of laser printer is refilled outside the college campus.

**GREEN CAMPUS AUDIT**

- Gardens inside the college premises are found well maintained.
- There are adequate fruit trees in the college to attract birds.
- Total 178 plants are available in the garden in which 52 tall tree species and 11 medicinal tree species and 24 ornamental garden tree species are present in the college campus.
- Preparation and distribution of sapling during the monsoon season among the students.
- Students are encouraged to participate in activities like tree plantation drives.
- College has some major techniques like, environmental education programs, tree adaptation activity and wastes segregation available in the campus.

**LIST OF COMMON RECOMMENDATIONS**

- Comparative and statistical analysis of green audit
- Adopt an environmental policy for the college.
- Conduct more seminars and group discussions on environmental education.
- Students and staff can be permitted to solve local environmental problems.
- Renovation of cooking system in the canteen to save gas.
- Establish water, waste and energy management systems.
- Celebrate environmental protected days like, Environment Day, Ozone Day etc.
- To aware and protect the environment deploy sign board in all classrooms of the college.
- Every year green auditing should conduct to ensure development along with safeguarding the environment.

**CRITERIA WISE RECOMMENDATIONS****WATER MANAGEMENT**

- There should be water consumption monitoring system in the college campus.
- Remove damaged or leaky taps and install sensitive taps.
- Awareness programs on water conservation should be increase.
- Install display boards to control over exploitation of water.
- Use more sprinkler for irrigation in garden.
- Water inlet and outlet of washrooms should be managed by the college.

**ENERGY MANAGEMENT**

- College should display sign boards for saving energy awareness.
- Conduct more save energy awareness programs for students and staff.
- More energy efficient electronic equipments should be replaced.
- Computers should run on standby mode when not in use.
- Regular monitoring of equipment and immediate rectification of any problems should be done as safety precaution in the campus.

**WASTE MANAGEMENT**

- Establish a functional biogas plant.
- Avoid paper plates and cups for all functions in the college.
- Implementation of sustainable projects to attain set environmental goals.

**GREEN CAMPUS MANAGEMENT**

- Green campus week should be conducted every year to protect the environment.
- All trees in the campus should be labeled with their common and scientific name.
- Try to implement Miyawaki plantation on edges and roadsides.
- Beautify the college building with indoor plants.
- Encouraging students through words and act for making greener campus.
- Involve students and staff for green campus activities.
- Plantation of native trees with maximum capacity to store atmospheric carbon with girth diameter of 51–70 cm which are require to give more attention during reforestation

activities to retrieve the effect of emitted carbon in the campus as well as maintain the natural heritage of the state.

**CARBON FOOT PRINT MANAGEMENT**

- Increase a system of car pooling among the staff to reduce the number of four wheelers coming to the college.
- Encourage students and staff member to use cycles.
- Discourage the students using two wheelers for their commutation.
- A model solid and water waste treatment system can be established in the college as a part of awareness program to the students.
- More trees should be planted in the campus to make a source of sink for the carbon dioxide and for other greenhouse gases.

**Audit Team**

Dr. Jagruti Jagiwala <i>PhD</i>	Principal Scientist
Dr. Nishith Dharaiya <i>PhD</i>	Hon. Advisor
Mr. Vishal Patel <i>M.Sc.</i>	Volunteer (Zoology)
Ms. Vishwa Prajapati <i>M.Sc.</i>	Volunteer (Botany)
Mr. Aditya Dharaiya <i>M.Sc.</i>	GIS expert

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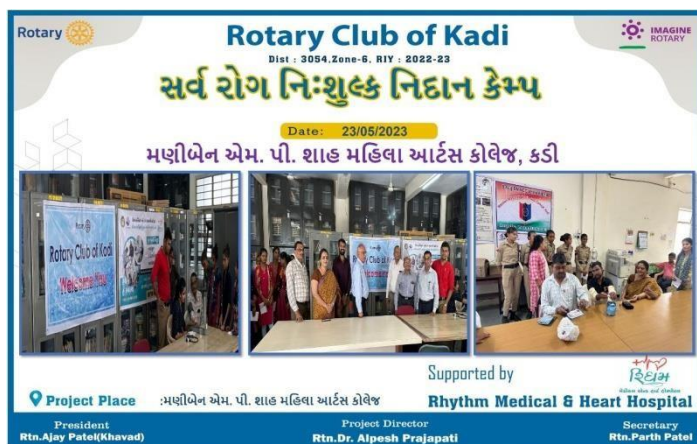
**Annexure1.****HEALTH IS WEALTH AWARENESS PROGRAMME****Annexure 2.****DEPLOYMENT OF SOLAR ARRAYS****Annexure 3.****CELEBRATION OF NATIONAL CLEANLINESS DAY**



#### Annexure 4. CELEBRATION OF INTERNATIONAL YOGA DAY



#### Annexure 5. FREE HEALTH CAMP



#### Annexure 6. SAPLING PLANTATION ACTIVITY



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Maniben M. P. Shah Mahila Arts College  
Kadi - (M.G.)-384440





### 1) Executive Summary

A nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. A clean and healthy environment aids effective learning and provides an effective learning environment. Educational institutions now a day are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. 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. The activities pursued by colleges can also create a variety of adverse environmental impacts. Environmental auditing is a process whereby an organization's environmental performance is tested against its environmental policies and objectives. Green audit is defined as an official examination of the college which has effects on the environment and as a part of such practice, internal Green Audit is conducted to evaluate the actual scenario at the campus.

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. Green auditing and the implementation of mitigation measures is a win-win situation for all the college, the learners and the planet. It provides staff and students better understanding of green impact on campus. Green auditing promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. 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 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.





**CLIENT: Maniben M. P. Shah Mahila Arts College, Kadi**  
**College Campus, Opp. N. C. Desai Petrol Pump Highway Road,**  
**Kadi - Kalol Road, Kadi - 384440 - Gujarat**  
**(Audit Period: June 2023 to May 2024)**

In Maniben M. P. Shah Mahila Arts College, Kadi campus the audit process involved initial interviews with management to clarify policies, activities, records and the co-operation of staff and students in the implementation of mitigation measures. This was followed by collection of data through the questionnaire, review of records, observation of practices and observable outcomes. In addition, the approach ensured that the management and staff are active participants in the green auditing process in the college. The College is Private added college, affiliated to Hemchandracharya North Gujarat University, Patan and UGC 2f and 12B. The college is located in rural area (Kadi Taluka). It has 10 acres campus area with 432 Girls Students. There are ICT enabled 12 Class Rooms, Computer Lab, Psychology Lab, Smart Class, Gymnasium, Indoor Sports Room, Huge Sports Ground, Library with fully automation, Principal Office, Admin Office, Staff Room, IQAC Room, WDC Office, NCC Office, NSS Office, Girls Room, Disable Friendly Washroom, Ramp, Lush Green Garden etc.

The baseline data prepared for the Maniben M. P. Shah Mahila Arts College, Kadi will be a useful tool for campus greening, resource management, planning of future projects, and a document for implementation of sustainable development of the college. Existing data will allow the college to compare its programmes with those of peer institutions, identify areas in need of improvement, and prioritize the implementation of future projects. We expect that the management will be committed to implement the green audit recommendations. We are happy to submit this green audit report to the Maniben M. P. Shah Mahila Arts College, Kadi authorities.

satellite image



## 2) Acknowledgment

On behalf of the Environmental Audit & Consultancy Cell at Shree M. & N. Virani Science College, Rajkot, Rajkot, we would like to express our sincere gratitude to the management of MANIBEN M.P.SHAH MAHILA ARTS COLLEGE, KADI for entrusting us with the important task of conducting their Environmental Audit/Green Audit.

We deeply appreciate the cooperation extended by your team throughout the assessment process. This cooperation was instrumental in the successful completion of the audit.

We would also like to extend our special thanks to DR. Varshaben C. Brahmhatt for their unwavering support. Their dedication proved to be invaluable in ensuring the project's completion. Finally, we thank all other staff members who actively participated in data collection and field measurements. Their contributions were essential to the smooth execution of the audit.

We are also thankful to:

SN	Name	Designation	Signature
1.	MR.NALINBHAI M.SHAH	SECRETARY	
2.	MRS.BELABEN N.SHAH	TRUSTEE	
3.	MR.D.K.CHAUDHARI	ASSO.PROFESSOR	
4.	DR.RATANBEN P.SOLANKI	ASSO.PROFESSOR	
5.	DR.JAIMINIBEN C. SOLANKI	ADHYAPAK SAHAYAK	
6.	MR.H.H.PARMAR	ASSO.PROFESSOR	
7.	MRS.D.D.SOLANKI	HEAD CLERK	

In closing, we would like to express our gratitude to **DR.HINA M.PATEL, PRINCIPAL OF MANIBEN M.P.SHAH MAHILA ARTS COLLEGE, KADI** for extending the opportunity to evaluate their esteemed campus's environmental performance.





3) **Disclaimer**

This Green Audit report has been prepared by the Environmental Audit & Consultancy Cell (EA&CC) at Shree M. & N. Virani Science College, Rajkot for of MANIBEN M.P.SHA MAHILA ARTS COLLEGE, KADI. It incorporates data submitted by college officials/representatives along with expert analysis by the EA&CC Audit team.

While all reasonable efforts have been made to ensure its accuracy, the report is based on information gathered in good faith. Conclusions are based on best estimates and do not constitute any express or implied warranty or undertaking. The EA&CC at Shree M. & N. Virani Science College, Rajkot, assumes no responsibility for any direct or consequential loss arising from the use of the information, statements, or forecasts in this report.

The findings presented in this report are based entirely on data provided by MANIBEN M.P.SHA MAHILA ARTS COLLEGE, KADI and gathered by the audit team during their audit & monitoring visit. It assumes normal operating conditions within the institution throughout the audit period. The auditors are unable to comment on environmental audit parameters outside the scope of the on-site surveys. Consequently, the report's findings are strictly limited to the timeframe during which the audit team conducted its assessment.

The EA&CC at Shree M. & N. Virani Science College, Rajkot, maintains strict confidentiality regarding all information pertaining to MANIBEN M.P. SHAH MAHILA ARTS COLLEGE, KADI. No such information will be disclosed to any third party except public domain knowledge or when required by law or relevant accreditation bodies.

This certificate is valid solely for the current Environmental Audit/Green Audit report. It may be automatically revoked if any significant changes occur in the quantity or quality of waste generation at the aforementioned institute.

EA&CC,

Shree M. & N. Virani Science College, Rajkot



#### 4) Introduction

Since the 2019-20 academic year, the National Assessment and Accreditation Council (NAAC) requires all Higher Educational Institutions (HEIs) to submit an annual Environmental Audit/Green Audit report. This requirement falls under Criterion 7 of the NAAC accreditation process, which evaluates institutions for their environmental sustainability practices. NAAC, an autonomous body in India, assigns accreditation grades (A, B, or C) based on various criteria, including environmental stewardship.

Furthermore, conducting Environmental Audit/Green Audits aligns with the Corporate Social Responsibility (CSR) initiatives of HEIs. By implementing measures to reduce their carbon footprint, institutions contribute positively to mitigating global warming.

In response to the NAAC mandate, the College management opted for an external Environmental Audit/Green Audit conducted by a qualified professional auditor. Environmental Audit/Green Audit entails a comprehensive environmental assessment, examining both on-campus and off-campus practices that directly or indirectly impact the environment. In essence, it is a systematic process of identifying, quantifying, recording, reporting, and analysing environmental aspects within the institute setting.

Environmental Audit/Green Audits originated as a tool to evaluate institutional activities that might pose risks to human health and the environment. It provides valuable insights for improvement, guiding institutions towards environmentally responsible practices and infrastructure.

The specific areas covered by this audit include Green Campus initiatives, Waste Management, Water Management, Air Pollution Control, Energy Management, and Carbon Footprint reduction strategies employed by the college.

The following sections delve deeper into the concept, structure, objectives, methodology, analytical tools, and overall goals of this Green Audit.

Educational institutions are increasingly prioritizing environmental concerns. As a result, innovative concepts are emerging to make campuses more sustainable and eco-friendly. Numerous institutions are adopting various approaches to address environmental challenges within their facilities, such as promoting





energy conservation, waste recycling, water use reduction, and rainwater harvesting.

The activities of educational institutions can have both positive and negative environmental impacts. A Green Audit is a formal evaluation process that assesses the college's environmental footprint. It provides a comprehensive picture of the current environmental conditions on campus.

Green Audits are a valuable tool for colleges to identify areas of high energy, water, or resource consumption. This allows institutions to implement targeted changes and achieve cost savings. Additionally, Green Audits can analyse the nature and volume of waste generated, leading to improved recycling programs or waste minimization plans.

Green auditing and the implementation of mitigation measures offer a win-win scenario for institutions, students, and the environment. It can foster health and environmental awareness, promoting values and beliefs that benefit everyone. Green Audits also provide an opportunity for staff and students to gain a deeper understanding of the impact their institution has on the environment.

Furthermore, Green Audits can translate into financial savings by encouraging a reduction in resource usage. This process also empowers students and teachers to develop a sense of ownership for personal and social environmental responsibility.

The Green Audit process typically involves collecting primary data, conducting a site visit with college representatives, and reviewing relevant policies, activities, documents, and records.

#### OBJECTIVE AND SCOPE

The broad aims/benefits of the Environmental Audit/Green Audit would be

- Environmental education through systematic environmental management approach
- Improving environmental standards
- Benchmarking for environmental protection initiatives
- Sustainable use of natural resource in the campus.
- Financial savings through a reduction in resource use



- Curriculum enrichment through practical experience
- Development of ownership, personal and social responsibility for the College campus and its environment
- Enhancement of College profile
- Developing an environmental ethic and value systems in young people

#### OUTCOMES OF ENVIRONMENT AUDIT TO EDUCATIONAL INSTITUTIONS

There are many advantages of environment audit to an Educational Institute:

1. Protect the environment in and around the campus.
2. Recognize the cost saving methods through waste minimization and energy conservation.
3. Empower the organization to frame a better environmental performance.
4. Portrays good image of institution through its clean and green campus.

#### 5) Audit Team

SN	Name of Auditor	Designation
1	Prof. Ravi S. Tank	Director
2	Prof. Jagniyant H. Lunagariya	Environmental Engineer
3	Prof. Hemil R. Chavda	Chemical Engineer
4	Dr. Mahesh M. Savant	Chemist
5	Dr. Abhijit S. Joshi	Microbiologist







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## Maniben M.P. Shah Mahila Arts College, Kadi

Kalol Road, Nr. Petrol Pump, Highway, KADI-384 440 (North Gujarat) India

(Managed by M.P.Shah Education Society,Kadi)

Website : [www.mahilaartskadi.org](http://www.mahilaartskadi.org)

Email : [prinhmpatel@gmail.com](mailto:prinhmpatel@gmail.com)

Ref. No.

Date :

### ENVIRONMENT POLICY

The relationship between the Maniben M.P.Shah Mahila Arts College, Kadi and nature is a long and enduring one, something that students and staff of the college are aware of. The buildings of this educational institution situated in Kadi taluka of Mehsana district, North Gujarat. Since 1991, the college has always had sustainable initiatives at the core of all activities. 25% of the 10 acre lush campus in the Diplomatic Enclave has been built up. The rest of the campus can be categorized as playgrounds, lawns and gardens. A huge area is left in its natural form and acts as a natural habitat for biodiversity and a large variety of species of grasses, herbs, shrubs and trees. The Green Campus and Environment Conservation Policy encourage students and staff to take the lead in creating positive change toward the conservation of the Environment. These initiatives call for a thorough review of all infrastructural, and administrative functions from the standpoints of energy efficiency, sustainability and the environment.

#### Objectives of the Policy

- To conserve energy and water resources within the campus by ensuring technological interventions, reduction in consumption, and creating awareness among staff and students.
- To fulfil the responsibility as a stakeholder by indulging in outreach activities for social development.
- To indulge with the local community to raise awareness about environmental issues and promote good practices for the safety of the environment.
- To practice and promote the 4 R principles of Reduction, Reuse, Recycle and Recover.
- To ensure the conservation of biodiversity within and around the college campus.
- To regularly carry out self-assessments to monitor our progress in cleanliness and sanitation management, greenery management, energy conservation, and water conservation.
- To invite certified external agencies to regularly conduct Environment, Green, and Energy audits.
- To participate in government programs to make the campus plastic free and implementing policy on E-governance to minimize the use of paper.
- To improve the infrastructure on campus for maximum energy conservation, water conservation, and making campus disable friendly.
- To provide a barrier-free environment to differently-abled students and faculty







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The focus areas of this policy are:

### 1. Green Audits :

To assess the college's contributions to a sustainable future, colleges can conduct green audits to determine the types and volumes of waste they produce. These audits can help colleges identify ways to improve their environmental practices, such as recycling projects, waste minimization plans, and reducing resource usage.

### 2. Promoting sustainable resource use:

Colleges can promote sustainable resource use on campus and beyond by defining priority areas and methods for implementing, managing, and evaluating environmental plans. These plans may include reducing energy and raw material consumption, and protecting and conserving ecological systems and resources.

#### a. Green Campus Initiatives:

- To promote beautification of college campus through landscaping
- Minimizing the use of packaged food
- Ban the use of plastic
- Organize tree plantation drives

#### b. Alternative sources of Energy and Conservation Measures:

- Reduce energy consumption by switching off all electrical devices when not in use.
- Phase out all high energy consuming lights by replacing them with LED lights.
- Refrain from using air conditioners except where necessary and at energy efficient temperatures.
- Support staff to take round to check and shut down electrical devices if on active mode.

#### c. Water conservation:

- Install rainwater harvesting system in the college.
- Install sanitary pad incinerators in girls' room.
- Install waste segregation systems in the college.
- Instal Open Well recharge/ Borewells





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Ref. No.

Date :

### d. Management of Degradable and Non-degradable Waste o Solid Waste Management:

- Maintaining leak proof taps, Regular rounds by the caretaker to take immediate steps to stop any water leakage through taps, pipes, tanks, toilet flush, etc.
- Minimizing the use of water by constructing efficient toilets.
- Extra/unused water to be poured to the plants/trees in the college campus.
- Display boards near washrooms and water coolers to create awareness about water conservation.

### 3. Involving students/ Staff/ Community:

- Colleges can involve students in environmental sensitivity programs and activities, such as developing technologies for reducing, reusing, and recycling waste. Colleges can also encourage students to use public or college transportation systems and vehicle pooling
- To organize workshops/webinars for students and faculty members regularly.
- Encourage student clubs to hold tree plantation events
- To proactively hold regular cleanliness drives within the campus and motivate students and staff members to conduct workshops, activities, and programs to promote the importance of cleanliness and sanitation.
- Participation in the activities under Swachh Bharat Abhiyan with the help of services provided by NSS and NCC.





7) **General Information**

- Does any Green Audit conducted earlier? (Yes/No): **YES**
- Total Area of the college = **10 ACRES (Acre/m<sup>2</sup>/Other please specify)**
- What is the total strength (people count) of the Institute?

AY	Students			Teaching Staff			Non-Teaching Staff			Total		
	M	F	Trans	M	F	Trans	M	F	Trans	M	F	Trans
2023-24	00	432	00	05	15	00	04	03	00	09	450	00

- What is the total number of working days of your campus in a year?

Month	No. of Working Days
July-23	26
August-23	25
September-23	21
October-23	21
November-23	18
December-23	25
January-24	26
February-24	25
March-24	24
April-24	23
May-24	25
June-24	21
<b>Total</b>	<b>280</b>



e. Which of the following are found near your institute?

Municipal dump yard	NO
Garbage heap	NO
Public convenience	YES
Sewer line	YES
Stagnant water	NO
Industry - (Mention the type)	YES ( COTTON INDUSTRIES)
Bus / Railway station	YES
Market / Shopping complex	YES
Play Ground	YES

f. Does your institute generate any waste? If so, what are they?

Type of waste		Response	Detail(s) of Waste Generated	Quantity of Waste Generated (kg)
Solid	Biodegradable	YES	LEAVES, PAPERS	1
	Non-biodegradable	(No)	PLASTIC, SANITARY NAPKINS,	--
	e-waste	(No)	NO	--
Liquid	--	(No)	RO WATER	--
Gas	--	(No)	NO	--



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g. How is the waste managed in the institute? By Composting, Recycling, Reusing, Others (specify)

- Installed incinerator to destroy used sanitary napkins.



- Installed dry waste management machine for leaves, papers, vegetables waste etc. and generate compost.





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- Put dustbins in all lobbies.



- h. Do you use recycled paper in institute? : No  
i. How would you spread the message of recycling to others in the community?

Poster competition activities	YES
Campaigns	YES
Rally	YES
Webinars and seminars	YES
Others (Please specify)	Various Awareness Programme

- j. Is there a garden in your institute?

Garden	YES	Area = 5600 sq.ft.
--------	-----	--------------------



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k. Total number of Plants in Campus?

SN	Species of Tree	No of Trees
1.	Neem Tree	25
2.	Ixora	50
3.	Chlorophytum	72
4.	Liliya	100
5.	Singapuri Ixora	70
6.	Hibiscus	85
7.	Karan	75
8.	Banana Plant	01
9.	Pheonix Plant	03
10.	Chameli	35
11.	Bottom Palm	05
12.	Mehndi	02
13.	Aleowera	02
14.	Rose	02
15.	Pennisetum	01
16.	Vicks Tulsi	02
17.	Ajwain Plant	02
18.	Curry Leaves	01
19.	Pimpri Mool	01
20.	Elite Green Silver Plant	02
21.	Mogra	25
	<b>TOTAL</b>	<b>561</b>



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**(Audit Period: June 2023 to May 2024)**

l. List uses of water in your institute

Basic use of water in campus	KL/Day (in LTRS)
Drinking	500
Gardening	1300
Kitchen and Toilets	1000
Others	2000
Hostel	NA
<b>Total</b>	<b>4800</b>

m. How does your institute store water? Are there any water saving techniques followed in your institute?

SN	Storage Type	Capacity (in Litres)	Quantity	Total (in Litres)
1.	OVER HEAD TANK	30,000	01	30,0000
2.	UNDER GROUND TANK	40,000	02	40,000
3.	Any Other (Specify)	--	--	--
<b>TOTAL STORAGE CAPACITY</b>				<b>70,000</b>





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n. Electricity Consumed

Month	Electricity Consumed (kWh)
July-23	1.41
August-23	1.31
September-23	1.58
October-23	1.80
November-23	2.22
December-23	1.45
January-24	1.37
February-24	1.91
March-24	1.33
April-24	2.22
May-24	1.83
June-24	2.30
<b>Total</b>	<b>20.73 units</b>



8) Green Initiatives by the Institute

Punit Sagar Abhiyan: Cleaning of Kadi Canal.

**Organized by:** Department of NCC, Maniben M.P. Shah Mahila Arts College, Kadi

**Date:** 19th December 2023

**Venue:** Kadi Canal, Kadi

**Total Cadets Participating:** 50

**Introduction:**

On 19th December 2023, the NCC Department of Maniben M.P. Shah Mahila Arts College, Kadi, actively participated in the Punit Sagar Abhiyan by organizing a canal cleaning drive at the Kadi Canal. This initiative is part of a nationwide campaign aimed at cleaning water bodies and raising awareness about the importance of preserving aquatic ecosystems.

**Objectives:**

- To clean and remove waste from the Kadi Canal.
- To raise awareness among the community about the harmful effects of water pollution.
- To foster a sense of environmental responsibility and civic duty among the NCC cadets.

**Participation:**

A total of 50 NCC cadets from the college took part in the cleaning drive. They were accompanied by NCC officers and faculty members who provided guidance and support throughout the event.

**Activities:**

**1. Briefing Session:**

The event began with a briefing session where the objectives of the Punit Sagar Abhiyan were discussed. The cadets were given instructions on how to safely and effectively clean the canal, including the proper use of cleaning tools and protective gear.

**2. Canal Cleaning:**

The cadets, divided into smaller groups, were deployed along different sections of the Kadi Canal. They removed plastic waste, debris, and other pollutants from the water and surrounding areas. The waste was collected in bags and later segregated for proper disposal.

**3. Waste Management:**

The collected waste was categorized into recyclable and non-recyclable materials. Recyclable items were set aside for recycling, while non-recyclable waste was disposed of in designated areas.

**4. Awareness Drive:**

In addition to cleaning, the cadets engaged with local residents, explaining the significance of keeping the canal clean and the broader implications of water





pollution on health and the environment. Pamphlets with information on reducing water pollution were distributed to the community members.

**5. Post-Activity Reflection:**

After completing the cleaning activities, the cadets gathered for a reflection session. Here, they shared their experiences and discussed the impact of the drive. Faculty members reiterated the importance of sustaining these efforts to protect local water bodies.

**Outcome:**

The Punit Sagar Abhiyan at Kadi Canal was a resounding success, with a significant amount of waste removed from the water body. The event not only helped in cleaning the canal but also educated the community about the importance of maintaining clean and healthy water sources. The cadets demonstrated commendable dedication and teamwork throughout the event.

**Conclusion:**

The NCC Department of Maniben M.P. Shah Mahila Arts College, Kadi, successfully conducted the canal cleaning drive under the Punit Sagar Abhiyan on 19th December 2023. The efforts of the cadets and the support from the faculty contributed to the positive outcome of the event. The department plans to continue its participation in such environmental initiatives to ensure the preservation of natural resources and to instill a sense of environmental stewardship among the cadets.

➤ **College Campus and Classroom Cleaning Drive:**

**Organized by:** Department of NCC, Maniben M.P. Shah Mahila Arts College, Kadi

**Date:** 26th September 2023

**Venue:** College Campus, Maniben M.P. Shah Mahila Arts College, Kadi

**Total Cadets Participating:** 52

**Introduction:**

On 26th September 2023, the NCC Department of Maniben M.P. Shah Mahila Arts College, Kadi, organized a campus and classroom cleaning drive. This event was a part of the Swachh Bharat Abhiyan, aimed at promoting cleanliness and hygiene within educational institutions.

**Objectives:**

- To maintain cleanliness and hygiene in the college campus and classrooms.
- To create awareness among students about the importance of a clean and healthy environment.
- To instill the values of discipline and community service among the NCC cadets.

**Participation:**

A total of 52 NCC cadets actively participated in the cleaning drive. The event also saw the involvement of faculty members, who guided the cadets and ensured the smooth execution of the activity.



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**Activities:**

**1. Briefing Session:**

The event began with a briefing session where the NCC officers explained the significance of cleanliness and outlined the tasks to be performed. The cadets were divided into groups, each assigned to specific areas of the college campus and classrooms.

**2. Campus Cleaning:**

The cadets, equipped with cleaning tools, thoroughly cleaned various parts of the campus, including the gardens, pathways, and common areas. Litter was collected, and proper disposal methods were followed.

**3. Classroom Cleaning:**

Special attention was given to cleaning the classrooms. The cadets dusted the furniture, cleaned the blackboards, and ensured the floors were spotless. Windows and doors were also wiped clean.

**4. Waste Management:**

The collected waste was segregated into biodegradable and non-biodegradable categories. The biodegradable waste was appropriately disposed of in compost pits, while non-biodegradable waste was sent for recycling.

**5. Awareness and Reflection:**

After the cleaning activities, the cadets gathered for a reflection session where they shared their experiences and insights. Faculty members emphasized the importance of maintaining cleanliness as an ongoing responsibility and not just a one-time event.

**Outcome:**

The cleaning drive was highly successful, with the campus and classrooms left spotless and hygienic. The event also served as a practical lesson in environmental responsibility for the cadets, reinforcing the values of cleanliness and community service.

**Conclusion:**

The NCC Department of Maniben M.P. Shah Mahila Arts College, Kadi, successfully conducted the campus and classroom cleaning drive on 26th September 2023. The active participation of the cadets and the dedication displayed by all involved contributed to the success of the event. The department plans to hold regular cleaning drives to sustain the cleanliness of the college premises and to continue promoting the Swachh Bharat Abhiyan.

➤ **Cleanliness Campaign:**

**Objective:** To maintain a clean and hygienic college campus, promoting a healthy environment for students, faculty, and staff.

**Date:** 29-9-2023

**Time:** 10:00 AM - 1:00 PM

**Venue:** College Campus

**Participants:** Students, Faculty, and Staff of Maniben M P Shah Mahila Arts College, Kadi





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**Agenda:**

1. Inauguration and awareness session (10:00 - 10:30 AM)
2. Cleanliness drive (10:30 AM - 12:30 PM)
  - Division of participants into teams for different areas of the campus
  - Cleaning of classrooms, corridors, canteen, library, and toilets
  - Removal of waste and disposal
3. Refreshments and encouragement (12:30 - 1:00 PM)

**Activities:**

- Cleaning of the campus, including classrooms, corridors, canteen, library, and toilets
- Removal of waste and disposal
- Awareness session on importance of cleanliness and hygiene
- Encouragement and appreciation for participants

**Pre-Campaign Preparation:**

- Promotion of the campaign through posters, social media, and announcements
- Coordination with college authorities and faculty members
- Arrangement of necessary cleaning materials and equipment
- Division of participants into teams for different areas of the campus

**Post-Campaign Follow-up:**

- Sharing of campaign photos and outcomes on social media and college website
- Encouragement of students, faculty, and staff to maintain cleanliness
- Planning of regular cleanliness drives to reinforce the habit.

**"Green Village Initiative":**

**Tree Plantation event at the adopted village of Visalpur**

Objective: To promote environmental conservation and sustainability in the adopted village of Visalpur through tree plantation.

Date: 18-07-2023

Time: 10:00 AM - 1:00 PM

Venue: Adopted Village of Visalpur

**Participants:**

- Students, Faculty, and Staff of Maniben M P Shah Mahila Arts College, Kadi
- Villagers of Visalpur

**Agenda:**

1. Inauguration and welcome (10:00 - 10:15 AM)
2. Tree plantation ceremony (10:15 - 12:00 PM)
  - Planting of trees by participants
  - Explanation of the importance of tree plantation
3. Interaction with villagers and awareness session (12:00 - 1:00 PM)
  - Discussion on environmental conservation and sustainability
  - Distribution of saplings to villagers



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**Activities:**

- Tree plantation ceremony
- Awareness session on environmental conservation and sustainability
- Interaction with villagers and distribution of saplings

**Pre-Event Preparation:**

- Coordination with village authorities and villagers
- Selection of tree species and procurement of saplings
- Preparation of the village site for tree plantation
- Promotion of the event through posters, social media, and announcements

**Post-Event Follow-up:**

- Sharing of event photos and outcomes on social media and college website
- Encouragement of villagers to care for the planted trees
- Planning of future sustainability initiatives and events in the adopted village.

➤ **Environmental Awareness Campaign at Indroda Park, Gandhinagar**

**Campaign Objective:**

- To educate students and staff about environmental conservation and sustainability
- To promote awareness about the importance of protecting natural resources
- To encourage individuals to take action in reducing their environmental footprint

**Itinerary:**

- **Date:** 05-10-23
- **Time:** 9:00 AM - 1:00 PM
- **Location:** Indroda Park, Gandhinagar
- **Participants:** Students and staff of Maniben M P Shah Mahila Arts College, Kadi

**Agenda:**

1. Introduction and welcome (9:00 - 9:30 AM)
2. Guided park tour and environmental education session (9:30 - 11:00 AM)
3. Tree plantation activity (11:00 - 11:30 AM)
4. Interactive session on sustainable practices and waste management (11:30 AM - 12:15 PM)
5. Conclusion and pledge-taking ceremony (12:15 - 1:00 PM)

**Activities:**

- Guided tour of Indroda Park to learn about flora and fauna
- Tree plantation activity to promote afforestation
- Interactive session on sustainable practices, such as reducing plastic use, conserving water, and using public transport
- Waste management session to educate on proper waste disposal and recycling

**Expected Outcomes:**

- Increased awareness about environmental conservation and sustainability among students and staff
- Encouragement of individual actions to reduce environmental footprint
- Promotion of community involvement in environmental protection





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**Pre-Campaign Preparation:**

- Coordinate with Indroda Park authorities for permissions and arrangements
- Promote the campaign among students and staff through posters, social media, and announcements
- Prepare educational materials and interactive session plans

**Post-Campaign Follow-up:**

- Share campaign photos and outcomes on social media and college website
- Encourage students and staff to share their experiences and pledge to continue sustainable practices
- Plan follow-up activities to reinforce environmental awareness and action.

➤ **Event Name: Dangarva Village Cleanliness Drive:**

Date: 18-3-2024

Location: Dangarva Village

**Participants:**

- Students: 50
- Faculty: 5

Objective: To promote cleanliness and hygiene in the adopted village of Dangarva and create awareness among villagers about the importance of sanitation.

**Activities:**

- Cleaning of village streets, public areas, and water bodies
- Removal of waste and disposal
- Awareness session on importance of cleanliness and hygiene
- Distribution of dustbins and sanitation materials to villagers

**Outcomes:**

- Cleanliness of the village improved significantly
- Villagers showed enthusiasm and participated in the cleanliness drive
- Students and faculty demonstrated teamwork and dedication to social cause
- Awareness created among villagers about importance of sanitation and hygiene

**Feedback:**

- Villagers appreciated the initiative and requested regular cleanliness drives
- Students expressed satisfaction and willingness to participate in future social initiatives
- Faculty members praised the students' enthusiasm and dedication to the cause

**Future Plans:**

- Regular cleanliness drives in adopted villages
- Expansion of cleanliness initiatives to other villages
- Involvement of more students and faculty members in social initiatives
- Collaboration with local authorities and organizations for greater impact.



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- **Event Name: Distribution of Tulsi Seeds and Tree Plantation with the collaboration of Rotary Club of Kadi**

**Date: 01-07-2023**

**Location: College Campus**

**Participation:**

- College Students: 70
- Rotary Club of Kadi Members: 10
- Faculty and Staff: 20

**Objective:** To promote environmental conservation and sustainability by planting Tulsi seeds and trees on the college campus.

**Activities:**

- Plantation of Tulsi seeds and trees
- Awareness session on importance of environmental conservation
- Distribution of Tulsi saplings to students and staff

**Outcomes:**

- 100 Tulsi seeds and 50 trees planted on the college campus
- Students and staff showed enthusiasm and participation in the event
- Awareness created about the importance of environmental conservation
- Collaboration with Rotary Club of Kadi strengthened

**Feedback:**

- Students expressed satisfaction and willingness to participate in future environmental initiatives
- Faculty and staff praised the students' enthusiasm and dedication to the cause
- Rotary Club of Kadi members appreciated the college's commitment to environmental conservation

**Future Plans:**

- Regular tree plantation drives on the college campus
- Expansion of environmental initiatives to adopted villages
- Involvement of more students and faculty members in sustainability projects
- Collaboration with local organizations for greater impact.





➤ **Distribution of kunda for birds at Dangrva Village.**

Date: 23-03-24

The distribution kunda for birds at Dangrva Village by Maniben M.P. Shah Mahila Arts College in Kadi, with the collaboration of Rotary Club of Kadi was a Commendable and impactful initiative. This project, a collaborative effort involving 50 dedicated students and several esteemed faculty members, aimed to provide a sustainable solution for the hydration of birds, particularly during the harsh summer months when water sources are scarce.

The project was led by prominent faculty members, including Prof. H.H. Parmar, Prof. D.K. Chaudhari, Prof. Jitendra Vihol, Prof. Bharti, and Dr.Trultaben.. Their guidance and supervision played a crucial role in the successful execution of this initiative. Each of these educators brought their unique expertise and commitment to the project, ensuring that the students were well-prepared and motivated to make a significant difference.

The students of Maniben M.P. Shah Mahila Arts College were enthusiastic participants in this initiative. They were involved in various stages of the project, from planning and organizing to the actual distribution of the earthen troughs. The students' engagement in this project was not just an educational experience but also a lesson in empathy and community service. They learned about the importance of conserving nature and the role humans play in protecting the environment and its inhabitants.

The earthen troughs were selected for their eco-friendly and sustainable qualities. Made from natural materials, these troughs are not only biodegradable but also provide a safe and suitable drinking source for birds. The decision to use earthen materials was rooted in the understanding that these are more compatible with the environment and are less likely to cause harm to the birds.

Distribution of the troughs was strategically planned to cover various areas where birds are known to frequent. The students conducted surveys to identify these locations, ensuring that the troughs were placed in places where they would be most effective. This meticulous planning was crucial for the success of the project, as the Support of Rotary Club of Kadi it maximized the chances of the birds finding and using the water troughs.

The community response to this initiative was overwhelmingly positive. Local residents appreciated the efforts of the students and faculty, recognizing the importance of providing water for birds. Many community members expressed their support by helping to maintain and refill the troughs, showing a collective responsibility towards the wellbeing of local wildlife.

The initiative also had a broader impact on the students involved. It instilled in them a sense of responsibility towards nature and taught them valuable lessons about teamwork, planning, and community service. The hands-on experience of working on a project that directly benefits the environment was an enriching addition to their academic curriculum.





Furthermore, the project aligned with the college's mission to foster a sense of social responsibility among its students. By involving students in such meaningful activities, Maniben M.P. Shah Mahila Arts College is not only educating them academically but also nurturing them into responsible citizens who are aware of their role in society and the environment.

In conclusion, the Distribution of earthen troughs for birds from Dangrva Village by Maniben M.P. Shah Mahila Arts College was a significant initiative that showcased the collaborative efforts of students and faculty members. Under the leadership of Prof. H.H. Parmar, Prof. D.K. Chodhari, Prof. Jitendra Vihol, Prof. Bharti, and Dr.Trultaben, the project successfully addressed a crucial need for the local bird population while imparting valuable lessons to the students involved. This initiative stands as a testament to the college's commitment to environmental conservation and community service.

#### 9) **Audit Methodology**

The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. The criteria, methods and recommendations used in the audit were based on the identified risks. The methodology includes: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the document, interviewing responsible persons and data analysis, measurements and recommendations. The methodology adopted for this audit was a three-step process comprising of:

**1. Data Collection** - In preliminary data collection phase, exhaustive data collection was performed using different tools such as observation, survey communicating with responsible persons and measurements.

Following steps were taken for data collection:

- Site Visit
- Data about the general information was collected by observation and interview.
- The power consumption of appliances was recorded by taking an average value in some cases.

**2. Data Analysis** - Detailed analysis of data collected include: calculation of energy consumption, analysis of latest electricity bill of the campus, Water consumption, Waste Generation and Greenery Management.



**3. Recommendation** – On the basis of results of data analysis and observations, some steps for reducing power and water consumption were recommended. Proper treatments for waste were also suggested. Use of fossil fuels has to be reduced for the sake of community health.

The above target areas particular to the University was evaluated through questionnaire circulated among the students for data collection.

The following data collected for the following areas during the assessment.

1. Environment & Waste Management
2. Energy Management
3. Water Management





**10) Monitoring, Observations & Recommendations**

**AAQM Analysis**

SR No.	Location Name	Parameter	Result ( $\mu\text{g}/\text{m}^3$ )	Permissible limit ( $\mu\text{g}/\text{m}^3$ )	Analytical Method
1.	Nr. College Building Entrance	PM10	31.8	100	IS 5182: Part 23
		PM2.5	19.3	60	IS 5182: Part 24
		SO <sub>2</sub>	7.6	80	IS 5182: Part 02
		NO <sub>x</sub>	21.7	80	IS 5182: Part 06

**Noise Monitoring**

SR No.	Location Name	Result dB(A)
1.	Nr. Main Gate	57.8
2.	Nr. Building Entrance	52.1
3.	Nr. Sports Building	50.3
4.	Nr. Principal Office	48.2
5.	Nr. Girls Common Room	47.6
6.	Nr. Physiotherapy college	51.7
7.	Nr. Parking	51.9
8.	Nr. Play Ground	48.7
9.	Nr. Commerce college	53.7
10.	Nr. Backside of Building	46.3



### Water Analysis

SN.	Parameter	Unit	Bore Water	Municipal Water	Method
1	pH	pH Unit	8.2	7.8	IS 3025 (Part-11): 1983 (RA 2006)
2	Temperature	C	27	27	IS 3025 (Part 9) : 1984
3	Suspended solid	mg/L	0	0	IS 3025 (Part-17): 1984 (RA 2012)
6	Total Dissolved Solid	mg/L	871	502	IS 3025 (Part-16): 1984 (RA 2006)
7	Sulphate	mg/L	35.25	27.75	IS 3025 (Part-24): 1986 (RA 2009)
8	Turbidity	NTU	0	0	IS 3025 (Part-10): 1984 (RA 2006)
9	Alkalinity	mg/L	54.9	18.3	IS 3025 (Part-23): 1986 (RA 2003)
10	Chloride	mg/L	427	52.5	IS 3025 (Part-32): 1988 (RA 2007)
11	Calcium	mg/L	112	48	IS 3025 (Part-40): 1988
12	Magnesium	mg/L	7.68	7.0	IS 3025 (Part-46): 1988
13	Hardness	mg/L	290	120	IS 3025 (Part-21): 2009





### Observations:

- **Land Use:** The College is spread over 10 acres of land area.
- **Green Initiatives:** The College supports efforts to eliminate plastic from campus. Students are advised to avoid using plastic on campus. The college organizes regular cleanliness drive to collect biodegradable and non-biodegradable waste. Non-biodegradable waste and e-waste are cleaned periodically by Municipal Corporation or managed by storing it in a safe place. Biodegradable waste is self-composting.
- **Fire & Safety:** The college building is also safe through state of the art housed Fire safety system.
- **Infrastructure:** The current building has modern infrastructure, especially modern classrooms with a seating capacity of over 500 students. There are more than 21 rooms, including smart class rooms, which are used by both faculty and students. The college is also equipped with sports facilities and a rich library. A computer laboratory facility is also available for science stream students.
- **Energy Consumption:** While the college has a solar energy generation facility, the overall energy consumption patterns, including electricity, water, and other resources, should be assessed to identify potential environmental impacts and energy efficiency opportunities.
- **Potential for Water Harvesting:** The presence of a functional borewell suggests potential for implementing rainwater harvesting systems to further conserve water resources.
- **Green Energy Utilization:** The College's adoption of rooftop solar power reflects a proactive approach towards utilizing renewable energy sources.
- **Community Engagement Potential:** The College's environmental efforts can be extended to engage the local community in sustainability practices.
- **Beautiful Campus Greenery:** The presence of over 550+ trees on campus creates a pleasant and environmentally friendly atmosphere.
- **Abundant Natural Light:** The well-designed college building maximizes natural light, promoting energy efficiency and a positive learning environment.

### Recommendations:

- **Water Conservation Measures:**
  - Install sensor-based faucets in washrooms and urinals to minimize water waste.
  - Implement water meters at various locations across campus to monitor and optimize water consumption.
- **Green Campus Initiatives:**
  - Expand the display of informative posters and slogans promoting the benefits of a green and clean campus.
  - Develop a dense plantation area using the Miyawaki method to create an oxygen bank and enhance campus greenery.
- **Energy Efficiency:**
  - Conduct drive to promote energy conservation, potentially including a designated "power saving day" each quarter.
  - Establish a regular cleaning and maintenance schedule for the rooftop solar panels to ensure optimal energy production.



### References

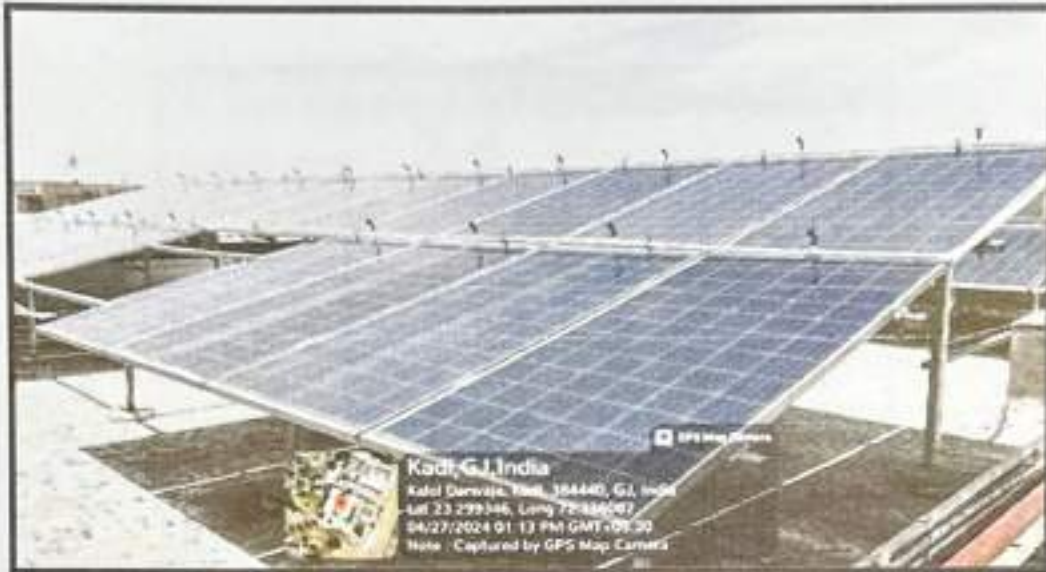
- The Environment [Protection] Act - 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 - The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act - 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules - 1975
- The Air [Prevention & Control Of Pollution] Act - 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules - 1982
- The Gas Cylinders Rules - 2016 (Replaces the Gas Cylinder Rules - 1981)
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices





CLIENT: Maniben M. P. Shah Mahila Arts College, Kadi  
College Campus, Opp. N. C. Desai Petrol Pump Highway Road,  
Kadi - Kalol Road, Kadi - 384440 - Gujarat  
(Audit Period: June 2023 to May 2024)

11) Photographic Evidences



Tree Plantation By NCC Department of College



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College Campus Cleanliness By NSS





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College Campus Cleanliness



Tree Plantation Dada Gram Ashram, Sanand



Save Water Rally





6) Environmental Policy





SAHAYDAY KELAVANI SAMAJ MANAGED

**Shri Manibhai Virani & Smt. Navalben Virani Science College**

(An Autonomous College affiliated to Saurashtra University, Rajkot)

NAAC Assessment & Accreditation Cycle - III 'A++' grade with CGPA 3.65 on 4 point scale

### **Environmental Audit Certificate**

**Maniben M. P. Shah Mahila Arts College, Kadi**

**College Campus, Opp. N. C. Desai Petrol Pump Highway Road, Kalol Road,**

**Kadi - 384440 - Gujarat - India**

For the AY (2023-24)

Environmental Audit for the period **June 2023 to May 2024** has been conducted for the **Maniben M. P. Shah Mahila Arts College, Kadi, College Campus, Opp. N. C. Desai Petrol Pump Highway Road, Kalol Road, Kadi - 384440 - Gujarat - India** to assess the green initiatives planning and efforts implemented in the college campus like Green Campus Management. This Environmental Audit is also aimed to assess eco-friendly initiatives of the Institute towards sustainability.

It is believed that the institution has presented authentic data on various aspects of working of the institute before the audit team. The recommendations are based on the data presented before the team as they existed at the audit time. This certificate is valid for the audit period only. However, it is subject to automatic cancellation in case of any change in prevailing green practice or misleading data. The findings reported in this audit report are entirely based on data furnished by the institute and data collected by the audit team during the audit. Thus, the findings reported in this audit report are strictly limited to the period when the audit was conducted.

The Environmental Quality in the campus is found **adequate and efficacious**.

**Ravi S. Tank**

*(Recognised Schedule-I Environmental Auditor, Gujarat Pollution Control Board-GPCB Gandhinagar, Gujarat)*

Pt. Director,

Environmental Audit & Consultancy Cell,

Amity University,

Rajkot-Gujarat-360005-India

I assure that the data presented is authentic to the best of my knowledge & I agree to comply with the recommendations received this report within a year at maximum after the internal review.

**Dr. Hina M. Patel,**

Principal,

Maniben M. P. Shah Mahila Arts

College, Kadi

College Campus, Opp. N. C. Desai Petrol Pump Highway Road,

Kalol Road, Kadi - 384440 - Gujarat-India



**Principal**

**Maniben M.P. Shah Mahila Arts College  
Kadi - (N.G.)-384440**