

**Sri Devaraj Urs Academy of Higher
Education and Research,
Tamaka, Kolar - 563103**

SDG 13

“Climate Action”

Introduction

Climate Change:

The Scientific Basis of Global Warming

Climate change refers to long-term shifts in temperatures and weather patterns. The current rapid warming trend is primarily attributed to the enhanced greenhouse effect. Key GHGs, including Carbon Dioxide, Methane and Nitrous Oxide, accumulate in the atmosphere and trap outgoing long-wave radiation, leading to an increase in global mean surface temperature (GMST).

Since the Industrial Revolution, the concentration of atmospheric Carbon Dioxide has surged from approximately 280 parts per million (ppm) to over 420 ppm, levels unprecedented in the last 800,000 years.

The primary sources of these emissions are:

Fossil Fuel Combustion: The burning of coal, oil, and natural gas for electricity generation, transportation, and industrial processes.

Deforestation and Land-Use Change: The removal of forests reduces the Earth's natural carbon sinks, and agricultural practices can release significant amounts of Methane and Nitrous Oxide.

Multiple lines of empirical evidence, including instrumental temperature records, satellite observations, and proxy data from ice cores and tree rings, confirm a consistent and accelerating warming trend that cannot be explained by natural forces alone.

Mitigation and Adaptation Strategies

Addressing the climate crisis requires a dual, interconnected approach: Mitigation (reducing the source of the problem) and Adaptation (adjusting to unavoidable impacts).

Climate Change Mitigation:

Mitigation efforts must focus on achieving net-zero GHG emissions globally by transitioning away from fossil fuels. Key strategies include:

Energy Transition: Rapid deployment of sustainable, low-carbon energy sources, such as solar, wind, and geothermal power. This requires massive investment in renewable energy infrastructure and smart grid technologies to manage intermittent energy supply.

Energy Efficiency and Conservation: Implementing policies and technologies to reduce overall energy demand across sectors (e.g., in buildings, industry, and transportation).

Sustainable Land Management: Protecting and restoring natural carbon sinks, particularly forests, wetlands, and coastal ecosystems. Promoting sustainable agriculture practices (e.g., agroforestry) that enhance soil carbon sequestration and reduce emissions.

Carbon Dioxide Removal (CDR): Developing and scaling technologies or natural solutions to actively remove Carbon Dioxide from the atmosphere. This includes both technological approaches (e.g., Direct Air Capture and Storage, DACCS) and nature-based solutions (e.g., enhanced afforestation/reforestation).

Climate Change Adaptation

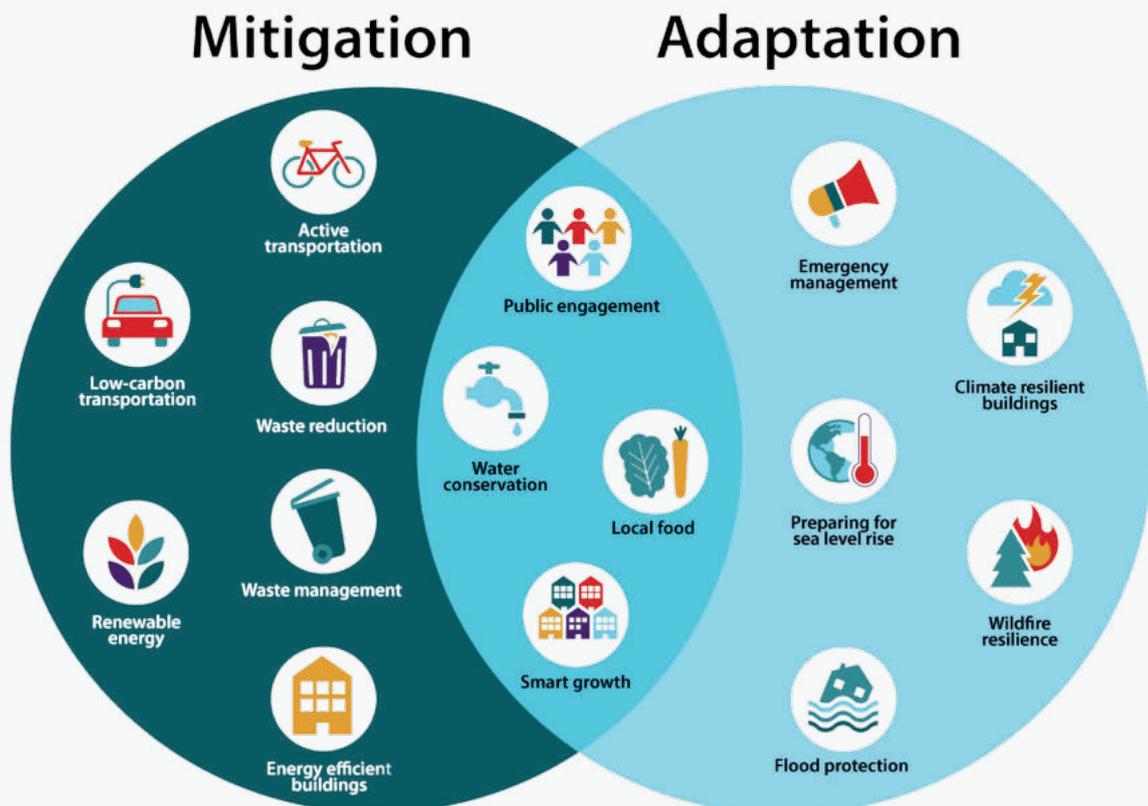
Adaptation is essential to build resilience and reduce the vulnerability of communities to current and future climate impacts.

Climate-Resilient Infrastructure: Upgrading and designing infrastructure (e.g., coastal defences, power grids, water systems) to withstand extreme weather events and rising sea levels.

Early Warning Systems: Implementing effective meteorological and disaster risk reduction systems to save lives and property.

Public Health Preparedness: Strengthening health systems to cope with heat stress and the changing patterns of infectious diseases.

Water Management: Developing strategies for water conservation, rainwater harvesting, and efficient irrigation to manage scarcity and improve drought resilience.



Initiatives at SDUAHER

Management of Degradable and Non-degradable Wastes



Green Campus Initiatives



Restricted Entry of Automobiles



Battery-powered Vehicles



Pedestrian-friendly pathways



Ban On The Use Of Single Use Plastic Bags



Landscaping With Trees And Plants

Tree Plantation Drives:

SDUAHER: A Continuous Commitment to Greening the Campus and Community

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH (SDUAHER), has firmly established environmental sustainability, particularly through extensive tree plantation and greenery initiatives, as a core component of its institutional responsibility and outreach.

The Academy's commitment is not limited to a single annual event but is reflected in continuous and sustained efforts throughout the year:

- **Regular Plantation Drives:** Tree plantation activities are organized regularly across the campus, in surrounding communities, and in villages. These drives are a prominent feature of the activities conducted by the National Service Scheme (NSS), Youth Red Cross (YRS), and other student associations.
- **Green Campus Initiatives:** The university's continuous involvement in planting various trees, including those of botanical and medicinal significance, is a key part of maintaining an eco-friendly campus ambience.
- **Integration with Environmental Observances:** Events like World Environment Day are consistently marked with large-scale sapling plantations at the Rural Health Training Centre (RHTC) premises and distribution of saplings to health workers and villagers, promoting off-campus greening.
- **Green Audit Confirmation:** The university's Green Audit Reports consistently highlight the Tree Plantation Activity as a core environmental practice, noting that "Planting many trees in the campus, community and villages are one of the regular features of NSS."

This consistent and proactive approach underscores SDUAHER's dedication to environmental conservation, promoting biodiversity, and creating a healthier, greener legacy for its students, staff, and the wider community.





Sustained Maintenance of a Herbal / Medicinal Garden

SDUAHER, places strong emphasis on the preservation and utilization of natural resources, prominently through the continuous maintenance and enrichment of its dedicated Herbal / Medicinal Garden.

The sustained existence and upkeep of this garden serves multiple crucial institutional purposes:

- **Academic Resource:** The garden functions as a living laboratory and an essential educational resource, particularly for students in medical, dental, nursing, and allied health sciences. It facilitates hands-on learning, practical demonstrations, and research on the identification, properties, and cultivation of various medicinal plants.
- **Biodiversity Conservation:** By cultivating a diverse range of plant species, including many indigenous and endangered varieties, SDUAHER actively contributes to the conservation of plant biodiversity and traditional medicinal knowledge.
- **Continuous Enrichment:** The garden is not static. Efforts are ongoing to introduce new, relevant species, ensure the proper labeling and documentation of existing plants, and apply sustainable gardening practices to ensure its long-term viability as a valuable institutional asset.

This continuous commitment to maintaining the Herbal / Medicinal Garden underscores SDUAHER's dedication to integrated education, environmental stewardship, and the promotion of traditional and natural health practices.

Rainwater Harvesting Systems

SDUAHER, recognizes the critical importance of water conservation and has integrated a robust Rainwater Harvesting (RWH) system as a key sustainable practice, maintaining its functionality on a continuous basis.

The university's continuous involvement in the RWH system ensures:

- **Groundwater Augmentation:** The RWH system is actively maintained to effectively capture and channel rooftop and surface runoff, ensuring that rainwater is used to recharge the groundwater table in the region, thereby enhancing the local water security, which is particularly vital for the Kolar District.
- **Adherence to Best Practices:** The continuous process includes the necessary operational maintenance, such as:
 - **Regular Inspection and Cleaning:** Ensuring that catchment surfaces (rooftops), filters, and conduits are kept clean and free of debris to maintain water quality and flow efficiency.
 - **System Functionality Checks:** Regularly reviewing the filtration and diversion mechanisms—including the use of first-flush devices—to ensure they are operating correctly and preventing contaminated initial runoff from entering the recharge structures.
- **Commitment to SDG 6:** SDUAHER's sustained efforts in this area are part of its broader commitment to achieving Sustainable Development Goal 6 (Clean Water and Sanitation), demonstrating responsible resource management within the institution and promoting sustainable water practices in the community.

By ensuring the continuous functionality and maintenance of its RWH system, SDUAHER secures a sustainable water future for the campus and surrounding area, making it a critical part of its environmental stewardship.

Rain Water Harvesting



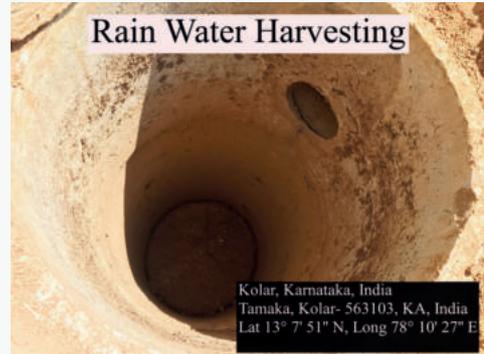
Rain Water Harvesting



RAIN WATER HARVESTING



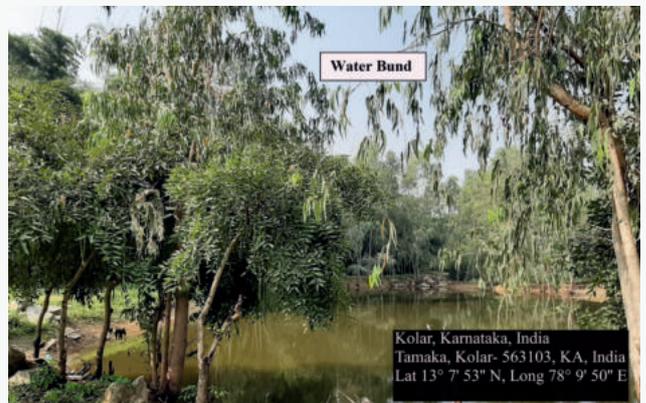
Rain Water Harvesting



Water Bund



Water Bund



Switch to LED Lighting and Automatic Power-Off Systems

SDUAHER, continuously implements and maintains energy-saving technologies, focusing on LED lighting and the integration of Automatic Power-Off mechanisms to minimize energy waste across its campus.

This dual and continuous approach ensures high efficiency and responsible resource use:

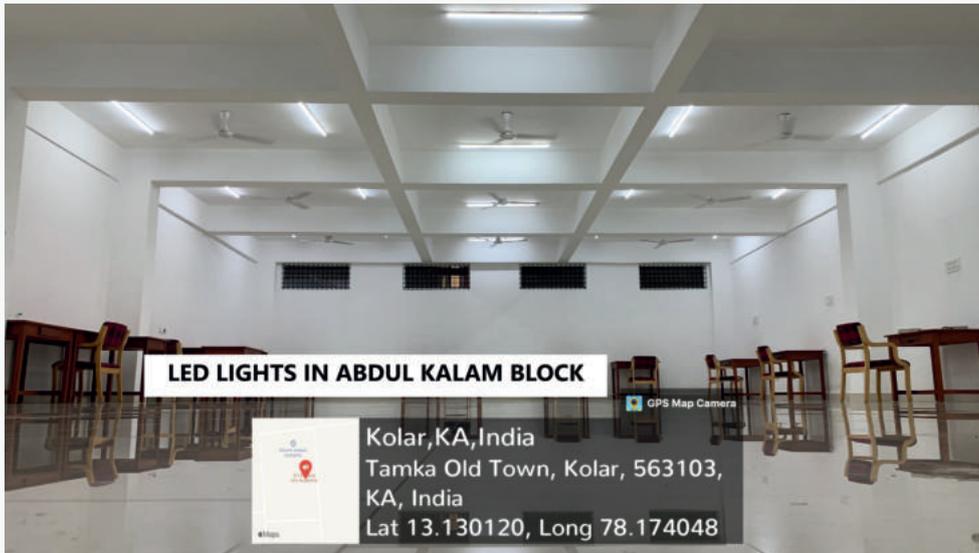
1. Continuous LED Lighting Deployment:

- The university maintains an ongoing policy of replacing conventional fluorescent and incandescent lights with high-efficiency LED fixtures.
- This initiative ensures sustained, campus-wide energy reduction (up to 75% less consumption than traditional lighting) while also reducing maintenance needs due to the longer lifespan of LEDs.
-

2. Implementation of Automatic Power-Off Mechanisms:

- SDUAHER utilizes technology such as occupancy sensors and timer-based controls in selected areas like classrooms, laboratories, and restrooms.
- These systems are crucial for ensuring that lighting, air conditioning, and other electrical equipment automatically switch off when a space is vacant or outside designated hours, preventing wasteful consumption due to human oversight.
-

By continuously investing in and maintaining both energy-efficient fixtures (LED) and intelligent control systems (Automatic Power-Off), SDUAHER significantly reduces its carbon footprint and operational costs, underscoring its proactive commitment to environmental sustainability and a "Green Campus" mandate.

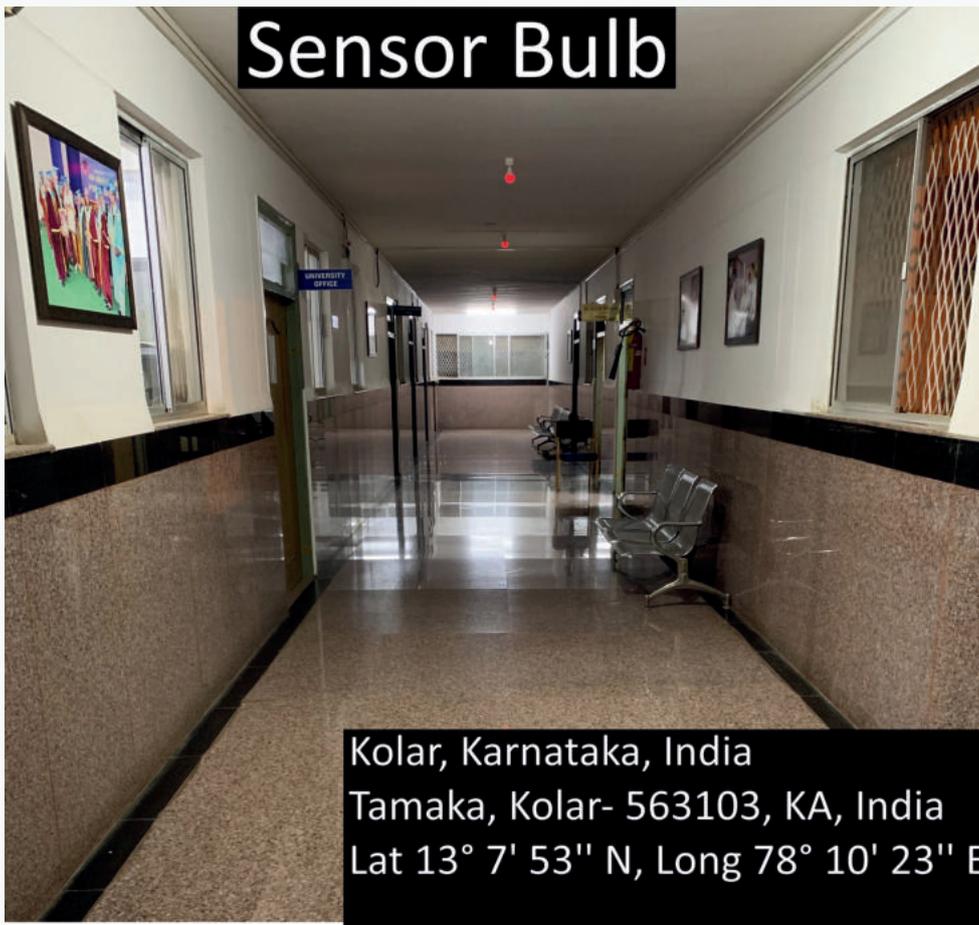


LED LIGHTS IN ABDUL KALAM BLOCK

GPS Map Camera



Kolar, KA, India
Tamka Old Town, Kolar, 563103,
KA, India
Lat 13.130120, Long 78.174048



Sensor Bulb

UNIVERSITY OFFICE

Kolar, Karnataka, India
Tamaka, Kolar- 563103, KA, India
Lat 13° 7' 53'' N, Long 78° 10' 23'' E

Solar Panels

SDUAHER, has made a significant and continuous commitment to sustainable energy by implementing and maintaining systems for solar energy generation on its campus.

This continuous involvement spans both the thermal and photovoltaic applications of solar power:

- **Solar Photovoltaic (PV) Power Generation:** The university has installed Rooftop Solar PV Panels (like the 60 KWp capacity system on the Medical College Block) to directly convert sunlight into electricity. This system generates clean electricity that meets a portion of the campus's large energy demand, demonstrating a dedication to reducing reliance on grid power and lowering the institution's carbon footprint.
- **Solar Thermal for Hot Water:** SDUAHER utilizes Solar Thermal Panels and Solar Water Heating Systems extensively, particularly on the rooftops of its hostels, hospital, and guest house. These systems continuously heat large volumes of water (e.g., 93,500 LPD capacity has been reported) for daily use, which is a highly effective way to conserve electricity that would otherwise be used for conventional water heating.

By integrating these solar energy systems, SDUAHER ensures a continuous supply of renewable energy, resulting in substantial savings on operational costs and a firm commitment to environmental stewardship and the principles of a green campus.



ROOF TOP PV SOLAR PANEL OVER COLLEGE BLOCK



Energy generated through Solar Rooftop Photovoltaic (SRTPV) system Installed over Medical College Block from June-2023 to May-2024

S.N	MONTH AND YEAR	METER READING IN kWh	UNITS GENERATED In kWh
	Initial reading-May-2023	96420	
1.	June-2023	102360	5940
2.	July-2023	107964	5604
3.	August-2023	113987	6023
4.	September-2023	119396	5409
5.	October-2023	125206	5810
6.	November-2023	130826	5620
7.	December-2023	136730	5904
8.	January-2024	142450	5720
9.	February-2024	147810	5360
10.	March-2024	153550	5740
11.	April-2024	159460	5910
12.	May-2024	165290	5830
Total Energy generated in kWh			79804

Financial benefits:

- Generation of 79800 kWh of energy through solar panels has saved about Rs.766080 (Considering Rs. 9.60 per Kw)

Environmental benefits:

- Approximately 50434 Kg of Co2 emission is reduced during the generation of 79800 kWh of energy. (0.632 Kg Co2 per Kw)

Curriculum Integration and Guest Lectures & Workshops

SDUAHER, ensures the continuous integration of environmental protection and sustainability into its curriculum through a sustained schedule of specialized lectures, workshops, and hands-on activities. This commitment to environmental education is reflected through the following continuous practices:

- **Environmental Studies as a Core Component:** Environmental Sciences/Studies is a mandatory and continuously taught subject across various programs, providing foundational knowledge on ecology, natural resources, pollution control, and sustainability.
- **Specialized Lectures and Workshops:** The university regularly arranges guest lectures, seminars, and workshops delivered by external experts and internal faculty. These activities focus on contemporary issues like climate change, biodiversity conservation, waste management (especially biomedical waste), and the importance of a green campus.
- **Active and Hands-On Activities:** SDUAHER moves beyond the classroom by continuously engaging students in practical, real-world activities that reinforce learning:
 - **Tree Plantation and Campus Greening:** Regular drives involve students and staff in maintaining the campus's green cover and medicinal garden.
 - **Waste Management Awareness:** Campaigns and demonstrations on proper waste segregation, including the specific handling of Bio-Medical Waste, are continuous features, aligning with their health-centric curriculum.
 - **Community Outreach:** Students are frequently involved in outreach programs through NSS and other units to educate local communities on health, hygiene, and environmental sanitation.

By continuously blending theoretical lectures with practical activities, SDUAHER ensures that its students graduate with not only academic competency but also a strong, ingrained sense of environmental responsibility and stewardship.



Biomedical Waste Collection



Kolar, Karnataka, India
 Tamaka, Kolar- 563103, KA, India
 Lat 13° 7' 49" N, Long 78° 10' 21" E



Welcome address



Welcome to Vice Chancellor



Welcome to the speaker



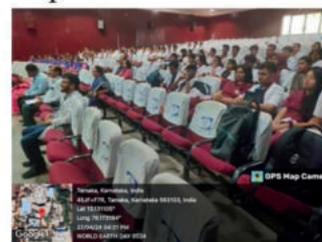
Speaker's introduction



Dr. Naveen's talk



Felicitation



Interdisciplinary Research on Environment

SDUAHER, maintains a continuous and active involvement in interdisciplinary research focused specifically on mitigating and understanding environmental pollution.

Leveraging its strong foundation in health, science, and technology, the university's research efforts are consistently directed towards real-world environmental challenges:

- **Health and Environmental Nexus:** Research is often conducted at the intersection of environmental science and health, particularly focusing on:
 - The health impact of environmental pollutants (e.g., air and water quality) on human health in the surrounding rural and semi-urban communities.
 - Studies on the management and impact of specialized waste streams like Bio-Medical Waste (BMW), involving collaboration between the Medical/Hospital and Public Health departments.
- **Collaborative Research Teams:** SDUAHER fosters a continuous environment of collaboration where faculty and researchers from different departments—such as Biochemistry, Microbiology, Community Medicine, and Environmental Engineering (in partnership with external institutions)—work together. This ensures a comprehensive, multi-faceted approach to analyzing pollution problems, from source to impact.
- **Focus on Local Solutions:** The university's research often centers on local environmental issues relevant to the Kolar region, including the quality of groundwater, the impact of agricultural runoff, and sustainable waste disposal technologies.

By continuously engaging in this interdisciplinary research, SDUAHER not only advances scientific knowledge but also actively contributes to evidence-based policies and practical solutions for environmental protection and public health enhancement.



Association of Respiratory Symptoms and the Pulmonary Function Parameters in the Residents of Mine Tailing Community

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KEYWORDS

Mine tailing,
Phlegm,
Cough,
Smoking

ABSTRACT:

Introduction: Mine tailings is type of rock waste from mining industry which reach in immense proportions appearing in the form of large hills on the land scape. Mines without a proper closure has impact on the environment leading to vulnerability for chronic respiratory illness.

Objectives: To estimate the prevalence of respiratory symptoms in the mine tailing community using (ATS – DLD-78A questionnaire and correlate the respiratory symptoms with lung function parameters in mine tailing community.

Methods: A cross sectional study of 400 subjects based on the prevalence of chronic bronchitis was conducted in the mine tailing community. Ethical clearance was obtained prior to the study. (ATS – DLD-78A) Questionnaire was used to record the presence of the respiratory symptoms. Using Spirotech for spirometry all the lung volumes and capacities (FVC, FEV1, and FEV1/FVC) was obtained

Results: The prevalence rates of respiratory symptoms in mine tailing community was found to be 38.3% for cough, 32.8% for shortness of breath, 31% for phlegm & smoking was 12.5%. A significant association was found with duration of stay in & around mine tailing area for obstructive/restrictive lung disease.

Conclusions: The significant decrease in lung function parameters and increase in the prevalence of respiratory symptoms among mine tailing community might be attributed to duration of stay in & around the mine tailing area though clinical disease is not present. Thus the respiratory symptom questionnaire will be an effective tool for screening respiratory illness & an useful add-on to spirometry in mine tailing community where the resources are poor.

1. Introduction

Mine tailings is type of rock waste from mining industry which reach in immense proportions appearing in the form of large hills on the land scape. During the beneficiation process, high-volume waste called 'tailings,' (the residue of an ore that remains after it is milled) will be generated. If a mining project involves the extraction of a few hundred million metric tons of mineral ore, then the mine project will generate a similar quantity of tailings. There are about 32 million tonnes of this tailings, which makes up the 15 dumps spread out along 8-km long distance in the mine area in KGF [1]

Major constituents of these tailings in KGF are silica, aluminium oxide, ferrous oxide, magnesium oxide and calcium oxide which can be toxic to humans. Some of the worst environmental consequences of mining have been associated with the open dumping of tailings which may contain hazardous chemicals. Mines without a proper closure plan can have an immense impact on the environment [2] These impacts can persist for decades and even centuries. They are the major generators of windblown dust which are transported and deposited on the communities nearby and are the sources of air pollution exposing the residents to the air and

Original Article

The Study of the Knowledge, Attitude, and Practice about the Air Pollution among the Residents of Kolar Town of South India

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Abstract

Introduction: Air pollution is a major environmental health problem affecting everyone. Few studies have revealed the specific needs of the residents; hence the thought demand for residents to the knowledge of air pollution information was explored using a questionnaire.

Aims and objective: To develop awareness and understanding of pollution hazards and their prevention among the Kolar population on air pollution by using a questionnaire.

Materials and methods: A cross-sectional study was conducted among 120 subjects in Kolar town by Purposive sampling technique with a validated, standard questionnaire by interview method and collected was analysed by SPSS version 20.

Results: Majority gained knowledge on air pollution from mobile phones and television, While a few said from the public and newspapers. Regarding attitude, 91% agreed that air pollution affected their health and the environment, with 116 (96.7%) 106 (88.3%) saying it from outdoor and indoor activities respectively. Statistically significant association was established between knowledge gained among educators with (P=0.004) and attitude toward outdoor air pollution with (P=0.001) and changes in behavioural patterns with (P=0.042).

Conclusion: This work served as a starting point for a more timely and complete survey on air pollution and its relation to health and economic growth.

Keywords: Environment, Air pollution, Knowledge, Attitude, Practice

Introduction

Air pollution is the leading risk factor causing premature death and disease which has prominent environmental health hazard worldwide.^[1-2]

These occupational health risks have become a concern, especially where there is unplanned urbanization.^[3] The KAP study has not been performed in Kolar region. The Air pollution index (AQI) had not been calculated as other air pollutants

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The Perception of Knowledge Attitude and Practice about light pollution among the residents of Kolar town

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Sri Devaraj Urs Medical College, Sri Devaraj Urs Academy of Higher Education and Research Tamaka , Kolar, Karnataka ,India 563103 (Corresponding Author)

Abstract:

Introduction: -Light pollution is the presence of excessive or unwanted artificial light in the environment, which can have harmful effects on human health and the environment. Light pollution is increasingly affecting ecosystems and all leaving beings. It has become world-wide problem as it is gradually diminishing the capacity to observe the stars.

Aim of the study: -This study aims to examine the prior knowledge, attitudes, and awareness of the light pollution phenomenon among the people of Kolar.

Materials and methods: -This is preliminary research by undergraduate students in Allied health department at SDUAHER University The study was carried out on questionnaire sheets. It was a cross-sectional survey of 120 subjects selected through purposive sampling. The questionnaire sheets were given to 120 people by our research students. The questionnaire consisted of 15 item questions which was close ended and choices questions. The development of the questionnaire considers indicators of prior knowledge, attitudes, and awareness in the case of the light pollution phenomenon. The reliable Cronbach's alpha score for the study was of Guttman reliability coefficient 0.671. The SPSS 20 Version. Descriptive statistics was performed and expressed in terms of proportions and presented

Results and Analysis: - The study showed that 95.8% of the subjects had an average initial knowledge about light pollution with the "good" category, and 51% of them have an attitude of caring for the environment in the case of light pollution phenomena with the category of "care". And the final result is that 74% of them realize that the impact of light pollution is a crucial issue

Conclusion: - The findings of this study can help the public, healthcare workers to identify and rectify incorrect knowledge and behaviors of residents and understand their needs.

Key words: Light pollution, Awareness, Knowledge, Practice, Attitude, Environment

Introduction:

Light pollution is the inappropriate use of artificial light that causes adverse effects on the environment [1] Light pollution is the presence of excessive or unwanted artificial light in the environment, which can have harmful effects on human health and the environment. [2] It is increasingly affecting ecosystems and all leaving beings. It has become world-wide problem as it is gradually diminishing the capacity to observe the stars. [3] The Rapid urbanization and globalization have fostered a "night lifestyle," where people engage in late-night activities, increasing artificial light use and contributing to light pollution. This excessive and unnecessary illumination, especially from outdoor sources, negatively impacts human health, wildlife, and ecosystems. Residential, traffic, and commercial lighting are the primary sources, with commercial lighting being the most intrusive.

Light pollution disrupts sleep patterns, affects circadian rhythms, and has been linked to vision problems, retinal stress, and even skin cancer. [4] Artificial light influences not only humans but also wildlife, impacting both species exposed

Waste management and segregation

SDUAHER, maintains a rigorous and continuous focus on effective waste management and segregation as a critical component of its environmental policy and its role as a Health Care Facility (HCF).

The university's continuous involvement is multifaceted, addressing both general solid waste and specialized medical waste:

1. Source Segregation and General Solid Waste

- **Three-Stream Segregation:** Waste generators (students, staff, etc.) are continuously mandated to segregate general solid waste at the source into distinct categories (e.g., biodegradable, dry/recyclable, and domestic hazardous waste) before collection.
- **Plastic-Free Policy:** SDUAHER has a Policy on Prohibiting the Use of Plastic Materials which involves continuous campaigns, audits, and awareness activities to Reduce, Reuse, and Recycle plastic waste, aiming for a plastic-free campus.
- **E-Waste Management:** A specific Electronic and Electrical Waste Policy is in place, ensuring the continuous, responsible disposal and recycling of obsolete IT assets and equipment through government-approved vendors to prevent environmental contamination.

2. Specialized Bio-Medical Waste (BMW) Management

- **Strict Adherence to Rules:** As a major teaching hospital and research center (R.L. Jalappa Hospital & Research Centre), SDUAHER is continuously involved in strict adherence to the Bio-Medical Waste Management Rules, 2016.
- **Color-Coded Segregation:** The most crucial continuous practice is the segregation of BMW at the point of generation (wards, labs, OTs, etc.) using the mandatory color-coded containers (e.g., Yellow, Red, White, Blue) to ensure each waste type receives the correct authorized treatment and disposal.
- **External Authorization:** The university maintains continuous agreements with authorized Common Bio-Medical Waste Treatment Facilities (CBWTF) for the safe transportation, treatment (like incineration or autoclaving), and final disposal of infectious and hazardous waste.

By maintaining these robust systems and strict segregation protocols, SDUAHER ensures continuous environmental compliance, protects public health, and demonstrates leadership in sustainable waste management practices.

300 KLD SEWAGE TREATMENT PLANT



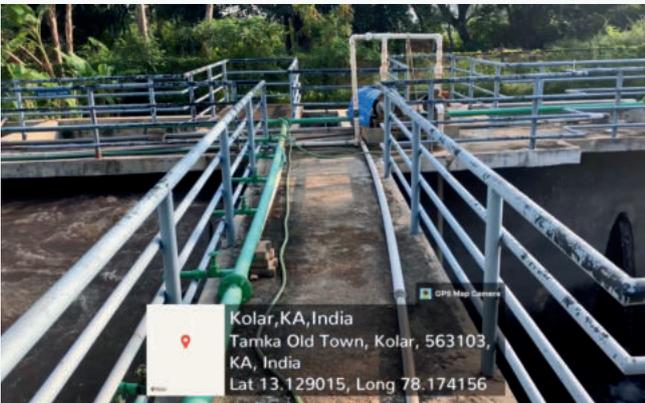
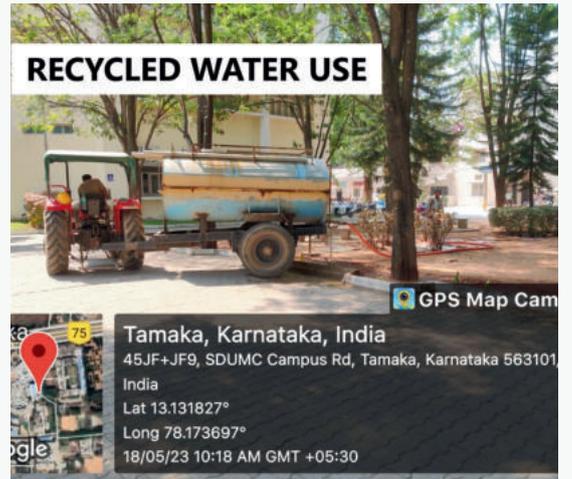
EFFLUENT TREATMENT PLANT



Biomedical Waste Collection



RECYCLED WATER USE



STP



Compost Pit



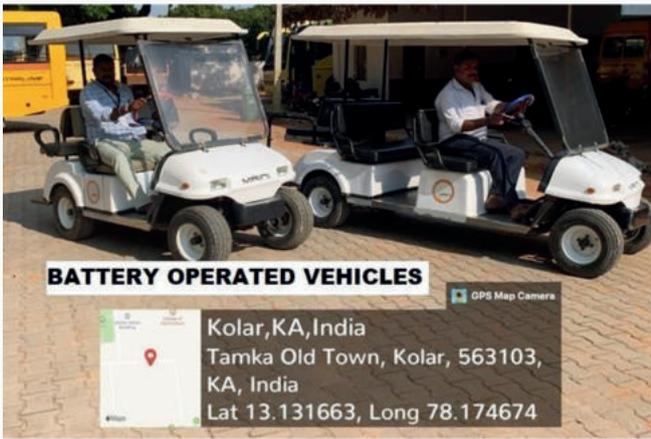
Green Campus

SDUAHER, maintains a continuous and comprehensive commitment to creating an environmentally sustainable "Green Campus" through the integration of multiple eco-friendly practices.

The university's sustained efforts cover critical areas of energy, transportation, and governance:

- **Solar Energy Generation:** SDUAHER continuously utilizes rooftop Solar Photovoltaic (PV) systems to generate clean electricity, significantly reducing its reliance on conventional grid power and lowering its carbon footprint.
- **Promotion of Sustainable Transport:** The campus encourages and facilitates the use of bicycles by students and staff. Furthermore, it has integrated the use of electrical vehicles (EVs) on campus for internal movement, aiming to minimize air and noise pollution caused by fossil fuel vehicles.
- **Regular Environmental Audits:** The university is continuously involved in conducting Environmental/Green Audits. These systematic assessments rigorously monitor, measure, and report on the institution's resource consumption (water, energy) and waste management, ensuring transparency and driving continuous improvement in all sustainability efforts.
- **Resource Conservation:** Complementary initiatives, such as the use of LED lighting and the continuous maintenance of Rainwater Harvesting systems, further reinforce the institution's commitment to energy and water conservation.

Through the continuous implementation and integration of these diverse strategies, SDUAHER demonstrates a firm commitment to environmental stewardship, setting a benchmark for sustainable practices in higher education.



BATTERY OPERATED VEHICLES

GPS Map Camera



Kolar, KA, India
 Tamka Old Town, Kolar, 563103,
 KA, India
 Lat 13.131663, Long 78.174674



GPS Map Camera



Kolar, KA, India
 Tamka Old Town, Kolar, 563103,
 KA, India
 Lat 13.131616, Long 78.173761



Electric Cars

GPS Map Camera



Kolar, KA, India
 Tamka Old Town, Kolar, 563103, KA, India
 Lat 13.131602, Long 78.174680



LANDSCAPE

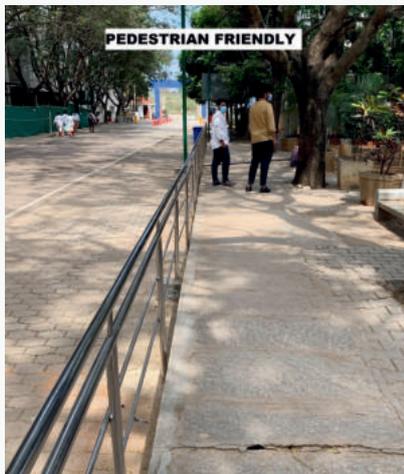
GPS Map Camera



Kolar, KA, India
 Tamka Old Town, Kolar, 563103,
 KA, India
 Lat 13.132070, Long 78.174288



Kolar, KA, India
 Tamka Old Town, Kolar, 563103, KA, India
 Lat 13°7'56"N, Long 78°10'25"E



PEDESTRIAN FRIENDLY



Kolar, KA, India
 Tamka Old Town, Kolar, 563103,
 KA, India
 Lat 13.132153, Long 78.173799

AES TESTING LABORATORY (IAF)
 (ISO 9001:2015/ISO 15189:2013 Certified Laboratory/NABL Accredited Laboratory)
 #44, 45, 1st Main Road, Vinayaka Nagar, Bagalapur, Nagavara Post, Bangalore - 560 073.
 Mob: 9826553762, 9838553285, 9009616268, Email: aes@aeslaboratory@gmail.com, Web: www.aeslab.co.in

TEST REPORT Page: 1 of 1

Report No: AEST/24/09/W/0138 Report Date: 16/09/2024
 Issued To: M.V. R.I. Jalappa Hospital Customer Reference: Verbal
 Tamka, Kolar. Date of Receipt: 11/09/2024
 Date of Test Start: 11/09/2024
 Date of Completion of test: 16/09/2024
 Sample Received By: Customer Sample Particulars: Softener water (Girls Hostel)

Tests	Results	Limits (In mg/L)		Protocol IS:3025
		Maximum Acceptable Limits (In mg/L)	Maximum Permissible Limits (In mg/L)	
Odour	Agreeable	Agreeable	Agreeable	IS:3025/Part-5
Turbidity, NTU	<1.0	1	5	IS:3025/Part-20
Total Suspended Solids, mg/L	<2.0	200	600	IS:3025/Part-27
pH Value	7.00	6.5 - 8.5	No Restriction	IS:3025/Part-21
Electrical Conductivity, µm/cm	3469	—	—	IS:3025/Part-24
Total Dissolved Solids, mg/L	2161.0	500	2000	IS:3025/Part-26
Total Hardness as CaCO ₃ , mg/L	479.0	200	600	IS:3025/Part-21
Calcium Hardness, mg/L	300.0	—	—	IS:3025/Part-40
Magnesium Hardness, mg/L	170.0	—	—	IS:3025/Part-45
Chloride as Cl ₂ , mg/L	762.0	250	1000	IS:3025/Part-32
Sulphate as SO ₄ , mg/L	62.3	200	400	IS:3025/Part-34
Nitrate as NO ₃ , mg/L	8.3	45	No Restriction	IS:3025/Part-34
Iron as Fe, mg/L	Below	—	—	IS:3025/Part-36
Fluoride as F, mg/L	0.64	1.0	1.5	IS:3025/Part-60
Iron as Fe, mg/L	0.12	0.3	No Restriction	IS:3025/Part-53
Total Alkalinity as CaCO ₃ , mg/L	448.0	200	600	IS:3025/Part-23
Phenolphthalein Alkalinity, mg/L	Nil	—	—	IS:3025/Part-23
Reactive Silica as SiO ₂ , mg/L	61.4	—	—	IS:3025/Part-35
Colloidal Silica as CaCO ₃ , mg/L	20.3	—	—	IS:3025/Part-35
Sodium as Na, mg/L	121.0	—	—	IS:3025/Part-43
Total Coliform Count/100ml	18 MPN	Shall not be detectable in any 100ml sample	—	IS:1622-1981- RA 2018
E. Coli /100ml	3 MPN	Shall not be detectable in any 100ml sample	—	IS:1622-1981- RA 2018

Remarks: The given water sample not fit for domestic purpose as per IS 5050: 2012 for all physical, chemical and microbiological testing.

*****End of the Report*****

Power Quality Analysis Report
 17th- 19th December - 2024
 Report No: 3303/597

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By M.N SARAVANAN

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To conclude SDUAHER is continuously involved in Climate Change Mitigation efforts through dedicated, campus-wide initiatives aimed at reducing greenhouse gas emissions and promoting sustainability.

Key continuous actions include:

- **Energy Transition:** Extensive use of Solar Energy Generation and campus-wide conversion to LED lighting to reduce reliance on carbon-intensive grid electricity.
- **Carbon Sequestration:** Continuous tree plantation and maintenance of the Herbal/Medicinal Garden, enhancing the campus's carbon sinks.
- **Sustainable Transport:** Promotion of bicycles and use of electrical vehicles (EVs) to minimize transportation-related emissions.
- **Water Management:** Maintaining Rainwater Harvesting systems to conserve water and reduce energy used for water sourcing and pumping.