JSS ACADEMY OF HIGHER EDUCATION & RESEARCH

(DEEMED TO BE UNIVERSITY) MYSURU

COMPENDIUM ON SDG 13

2020-2021

CLIMATE ACTION

CONTENTS

1. INTRODUCTION

The Goal 13 is aimed at integrating climate change measures, disaster risk measures and sustainable natural resource management into national development strategies. To minimise the human impact of geophysical disasters, the Goal calls for strengthening resilience and adaptive capacity, including human and institutional capacity on mitigation, adaptation, and early warning. Efforts at the national level - for adopting green technologies, promoting the use of clean and modern source of energy, advocating for behavioural change for sustainable use of resources, must be complemented by international cooperation on climate change since the causes and effects of climate change transcend national boundaries.

Impacts of COVID-19 pandemic

As a result of the COVID-19 pandemic, there has been a drastic reduction in human activity and an economic crisis. This has resulted in a 6% drop in greenhouse gas emissions projected for 2020. In this context the 6% drop of emissions projected for 2020 are still not enough to reach the target. Emissions are expected to rise once the restrictions to face the pandemic are lifted. The year 2020 has seen a decreased motion of climate crises as a result of the COVID-19 pandemic a drop of 6% in CO_2 emissions has been noted in this year and potentially up to 8%, the largest year-on-year reduction on record. A rebound in transport pollution is predicted as lockdown restrictions of governments ease up. This is because countries like the United States are reducing efficiency standards and restricting environmental standard enforcement. The outcome of the UN Climate Change Conference UK '20, or, COP26, is being postponed. This is another setback and example of how collective action has been put on hold while nations globally recover from the fallout of the pandemic.

Climate change is increasing the frequency and intensity of extreme weather events such as heat waves, droughts, floods and tropical cyclones, aggravating water management problems, reducing agricultural production and food security, increasing health risks, damaging critical infrastructure and interrupting the provision of basic services such as water and sanitation, education, energy and transport. Global warming is causing long-lasting changes to our climate system, which threatens irreversible consequences. To limit warming to 1.5 C, global net CO2 emissions must drop by 45% between 2010 and 2030, and reach net zero around 2050. In this background, Goal 13 calls for immediate action to combat climate change and its impacts by strengthening adaptive capacity to climate-related hazards and natural disasters in all countries, by integrating climate change measures into national policies, strategies and planning, by improving education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning and by promoting mechanisms for raising capacity for effective climate change-related planning and management in least developed countries. The goal also aims to implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the

context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization.

2. GREEN POLICY & GREEN INITIATIVES OF JSSAHER

JSS AHER has its Green Policy which emphasizes on the following to be strictly followed in all its campuses.

- Provision for natural lighting and adequate ventilation in all its buildings

- Maintenance of clean, green, and smart campus – waste segregation and planned disposal of waste through authorized agencies only
- Disposal of biomedical waste, Chemicals, and e-waste as per the norms of the Karnataka State Pollution Control Board
- Energy conservation strategies (use of CFL/LED lights and Solar heaters and Air source heat pumps in the hostels)
- Plastic-free campuses
- Conservation of water resources - Rainwater harvesting and wastewater treatment
- Reducing paper communication
- The HEI actively organizes Swachh Bharat Abhiyan and creates awareness and consciousness amongst students.
- Provision for natural light in all its buildings

The Institution also has included a subject Environmental Sciences in all courses as stipulated by UGC and organizes Environment Day and Water Day. The Institution believes in preserving traditional medicine and has established medicinal plants garden and promotes eco-friendly cultivation practices by organizing medicinal plants exhibition in JSS Urban Health Centre.

To meet the needs and sustainable management of fresh water, the rainwater harvesting, and utilisation systems have been established in all the campuses of the university to aid towards the greater objectives of water management and conservation and increasing recharge of groundwater by capturing and storing rainwater, rainwater harvesting from rooftop run-offs and natural waterbodies and the community development. The below mentioned models are established in the various buildings based on the size of the building and the extent and topography of the land.

• Simple roof water collection systems - Most of the rooftop rainwater harvesting has been completed by constructing five water storage structures with a storage capacity of 1000 m3.

• Land surface catchments – a simple way of collecting rainwater by retaining the flows (including flood flows) of small creeks and streams in small storage reservoirs (on surface or underground) created by low-cost dams

• Collection of storm water – The surface runoff collected in stormwater ponds/reservoirs is subject to a wide variety of contaminants and every effort is made to keep these catchments clean.

There is no country that is not experiencing the drastic effects of climate change.

3. A GLANCE AT EFFORTS OF JSSAHER TOWARDS CLIMATE ACTION

- Abiding by JSS AHER Green policy
- Ensuring greenery in the college and hospital campus
- Conducting disaster preparedness mock drills
- Rainwater harvesting
- Participation in disaster response activities

JSSAHER has strengthened the resilience and adaptive capacity to environmental conservation and climate change related hazards and activities. It has banned plastics in the campus and given more importance to enhance the green cover in and around the department. In addition, sustainable environmental conservation strategies and planning has been initiated by declaring the campus as GREEN CAMPUS and implementing various plans of action to conserve the water, energy, and greenery in the campus.

JSSAHER has organized various awareness campaigns and cleaning drives to restore the various environmental components. Solar-based lighting system and heating provisions have made sustainable environmental

conservations. Paperless communications, water conservation by rain water harvesting, wastewater recycling and reuse, less energy consuming lighting and system utility, increased bicycle usage rate, waste to value added products, etc., are the important initiations made for achieving SDGs related to climate change mitigation.

4. GREEN CAMPUS IINTIATIVES FOR CLEAN AIR IN JSSAHER CAMPUS

Plants preservation & conservation in JSSAHER Campus &

i. Plant nursery in the campus

ii. Herbal garden

The Institution believes in preserving traditional medicine and has established medicinal plants garden and promotes eco-friendly cultivation practices. Gardening, with any kind of plants life, should be viewed as a relaxing and fulfilling activity. It is not only bringing you closer to the earth, but also allows you to have a somewhat intimate relationship with it. There's different kind of satisfaction and bring close to the nature, understanding working of this life form and forging a symbiotic relationship with the elements.

The herb garden is often a separate space in the garden, devoted to growing a specific group of plants known as herbs. These gardens may be informal patches of plants, or they may be carefully designed. Herb gardens may be purely functional, or they may include a blend of functional and ornamental plants.




iii. List of plants

S. No	General name of the plant	Biological source	Family	Uses
1.	Acalypha	Acalypha indica	Euphorbiaceae	**Coughs, diarrhoea, flatulence, haemorrhages.**
2.	Agnimantha	Premna mucronata	verbanaceae	**Lactation**
3.	Aloes	Aloe Vera	Liliaceae	**Laxative and purgative**
4.	Amla	Embelica officinalis	Euphorbiaceae	**Cooling, diuretic, as general tonic**
5.	Apamarga	Achyranthus aspera	Amerantnaceae	**Diarrhoea, giddiness, nausea, and vomiting**
6.	Arjuna	Terminalia arjuna	Combretaceae	**Cardio tonic, astringent, gastric ulcer**
7.	Artemisia	Artemisia abrotanum	Asteraceae	**Immunosuppressant, Anti-microbial**
8.	Artemisia	Artemisia annua	Asteraceae	**Antimalarial**
9.	Artemisia	Artemisia nilgirica	Asteraceae	**Anthelmintic, flavour**
10.	Artichoke	Cyanara scolymus	Compositae	**Bitter tonic, diuretic**
11.	Artocarpus	Artocarpus integrifolia	Moraceae	**Ediblefruit**
12.	Ashoka	Saraca indica	Combretaceae	
13.	Aswagandha	Withania somnifera	Solanaceae	**Diuretic, immunostimulant, aphrodisiac**
14.	Bahama grass	Cynodon dactylon	Gramineae	**Cholera, ulcerative colitis, flatulence**

15.	Bandadamara	Diospyros peregrine	Ebenaceae	**Anti-diabetic, antioxidant, anti-stress.**
16.	Basil	Ocimum basillicum	Lamiaceae	**Tonic, Skin Care, Analgesic, Antidepressant, Antiseptic, Antispasmodic, Antivenomous, Aphrodisiac, Bactericide, Carminative, Cephalic, Digestive,**
17.	Bauhinia	Bauhinia racemosa	Fabaceae	**Antioxidant and Anti-microbial**
18.	Bilva	Aegle marmelos	Rutaceae	**Digestive tonic, laxative**
19.	Blood flower	Asiclepias currasavica	Asclepiadiaceae	**Insecticidal**
20.	Bougainvillea	Bougainvillea spectabilis	Nyctaginaceae	**Headache, diuretic**
21.	Butea	Butea monosperma	Fabaceae	**Astringent**
22.	Castor oil	Ricinus communis	Euphorbiaceae	**Laxative and purgative**
23.	Cocos	Cocos nucifera	Palmacea	**Anti-bacterial, anti-viral**
24.	Coleus	Coleus aromaticus	lamiaceae	**Aromatic, carminative, emmenagogue**
25.	Cotton	Gossypium herbaceum	Malvaceae	**Abortion, amenorrhea, sterility**
26.	Croton	Croton tiglium	Euphorbiaceae	**Cholera, colds, cough, ear disorders**
27.	Curry leaves	Murraya koenigii	Rutaceae	**antidiabetic, antioxidant, antimicrobial, anti-inflammatory, hepatoprotective**
28.	Cycas	Cycas revoluta	Cycadaceae	**Toxic, Causes GIT irritation, liver failure**
29.	Datura	Datura stramonium	Solanaceae	**Asthma, sedative, expectorant, antispasmodic**
30.	Euphorbia	Euphorbia cotonifolia	Euphorbiaceae	**Schistosomiasis**
31.	Fig	Ficus carica	Morceae	**Blood purifier, laxative**
32.	Geranium	Pelargonium graveolens	Geraniaceae	**Flavouring agent**
33.	Ginger	Zingiber officinalis	Zingiberaceae	**Stimulant, carminative, flavouring agent**
34.	Guava fruit	Psidium gujava	Myrtaceae	**Diarrhoea, astringent, antimicrobial, diabetes**
35.	Guduchi	Tinospora cordifolia	Menispermaceae	**Hepatoprotection, immunomodulator, antioxidant**
36.	Hemidesmus	Hemidesmus indisus	Apocyanaceae	**Alternative, demulcent, diaphoretic and diuretic**
37.	Henna	Lawsonia inermis	Lythraceae	**Natural dye, skin disorders**
38.	Hibiscus	Hibiscus rosa sinensis	Malvaceae	**Anti-spasmodic, astringent aphrodisiac, emollient**
39.	Horse raddish	Cochlearia armoracia	Cruciferae	**Diuretic, antiseptic, cataract, spots on cornea**
40.	Hourse chestnut	Aesculus hippocastanum	Sapindaceae	**Anal problems, cough, constipation, headache.**
41.	Ixora	Ixora coccinea	Rubiaceae	**Anti-inflammatory**
42.	Jamun	Syzygium cumini	Myrtaceae	**Diabetes, controlling blood pressure**
43.	Jujube	Zizuphus jujube	Zingiberaceae	**Insomnia, anxiety, oedema, congestive heart failure, asthma, and throat diseases.**
44.	Kalakantala	Agave Americana	Agavaceae	**Gonorrhoea, scurvy, gastritis**
45.	Kapittha	Feronia elephantum	Rutaceae	**Edible, astringent, in diarrhoea and dysentery**

46.	Karanja	Pongamia glabra	Leguminosae	**Anorexia, piles, worm infestations, and flatulence and liver diseases**
47.	Kasaundi	Cassia sophera	Caesalpiniaceae	**Anxiety, depression, bronchitis, malaria**
48.	kundru	Coxccinil indica	Cucurbitaceae	**Improving digestion, laxative and stimulant**
49.	Kurchi	Holerina antidisentirca	Apocyanaceae	**Astringent, anti-diarrhoeal**
50.	Lebbeck	Albizzia lebbek	Fabaceae	**Astringent, cough, flu. Abdominal tumors**
51.	Lemon	Citrus limon	Rutaceae	**Scurvy, convulsion, dropsy, diarrhoea, sunstroke**
52.	Lemon grass	Cymopogon citrates	Graminae	**Oil is bactericidal, insect repellent**
53.	Lemon verbena	Lippia citriodora	Verbenaceae	**Flavouring agent, insecticide,**
54.	Mango	Manfigera indica	Anacardiaceae	**Dietary, Antioxidants**
55.	Milfoil	Achillea millefolium	Compositae	**Diaphoretic, stimulant, tonic**
56.	Neem	Azadirechta indica	Meliaceae	**Bitter tonic, antiseptic, anthelmintic**
57.	Nerium	Thevetia nerifolia	Apocynaceae	**Narcotic poison, cardiac stimulant in mild doses**
58.	Nirgundi	Vitex negundo	Lamiaceae	**Reduce inflammation, swelling of joints due to rheumatism and injuries**
59.	Pansi	Viola tricolor	Violaceae	**Diaphoretic, diuretic, anti-epileptic**
60.	Papaya	Carica papaya	Caricaecae	**Dyspepsia, fevers,**
61.	Passion fruit	Passiflora edulils	Passifloraceae	**Lower BP, flavouring agent**
62.	Pepper	Piper longam	Piperaceae	**Constipation, diarrhoea, earache, insomnia**
63.	Phyllantus	Phylanthus niruri	Euphorbiaceae	**Diuretic, liver diseases**
64.	Pongam tree	Pogamia pinnata	Fabaceae	**Nutrient, antiseptic, lubricant**
65.	Punarnava	Boerhavia diffusa	Nyctaginaceae	**Headache, diuretic, dropsy**
66.	Rauwolfia	Rauwolfia serpentina	Apocynaceae	**Sedative, anti-hypertensive**
67.	Rosemery	Rosmarinus officinalis	Labiatae	**For nervous disorders, carminative, stimulant**
68.	Rue	Ruta graveolans	Rutaceae	**Bitter tonic, anti-dysenteric**
69.	Sage	Salvia officinalis	Labiatae	**Astringent, aromatic, stimulant,**
70.	Sandal wood	Santalum album	Santalaceae	**Anti-inflammatory, urinary disorders**
71.	Shankapushpi	Evolvulus alsionides	Convolvulaceae	**Bitter tonic, vermifuge, chronic bronchitis**
72.	Teak	Tectona grandis	Verbenaceae	**cooling, laxative, sedative, piles, leukoderma, and dysentery**
73.	Thuja	Thujaoccidentlais	Cupressaceae	**Disinfectants, cleaners, insecticides**
74.	Tulasi	Occimum sanctum	Lamiaceae	**Earache, urinary disorders**
75.	Turmeric	Curcuma longa	Zingiberaceae	**Anti-septic and anti-bacterial**
76.	Vaj	Acorus calamus	Araceae	**Dyspepsia, for colic pain, nervine tonic.**
77.	Vasaka	Adathoda vasica	Apocynaceae	**Chronic bronchitis, asthma**
78.	Vetiver	Verivera zizanioides	Graminae	**Refrigerant, stimulant, diaphoretic**
79.	Vinca	Cathranthus roseus	Apocynaceae	**Anti –cancer, diarrhoea**
80.	**Vitis**	**Vitis quadrangularis**	**Vitaceae**	**Astringent, aromatic, stimulant,**

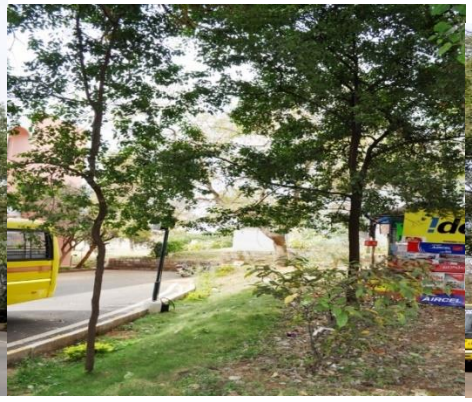
5. EXOTIC AND ENDANGERED SPECIES AND CONSERVATION











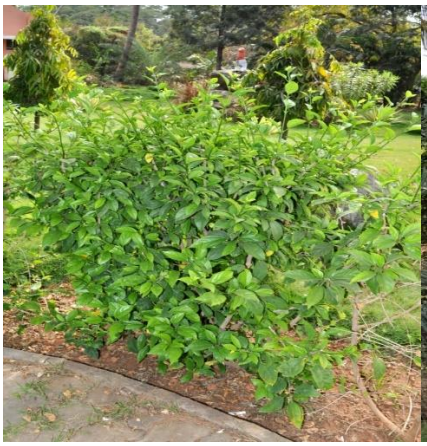



















6. GREEN INITIATIVE BY JSSAHER IN AND AROUND MYSORE

Planting Sapling


NSS Unit, JSS Dental College & Hospital observed NSS Day on 24 September 2020. On this occasion, Plant Saplings were planted in the University Campus. Dr Ravindra S, Principal, Mrs Anushree M, Asst Administrative officer, Mr Shadaksharaswamy B V, Superintendent, Dr Thippeswamy HM, NSS Programme Officer, Faculty, Post Graduates, House Surgeons and Students participated in this event.

JSS College of Pharmacy, Mysuru had organized alumni meet at Mysuru along with the alumnus, NSS unit JSSCP had planted about 50 saplings in the premises of the college as a mark of the alumni meet.NSS Unit of JSS AHER, Mysuru initiated a **GROW GREEN** movement. As a part of this initiative, **Seed Ball Sowing** program was organized at **Muthathi Forest**, Malavalli Tq, Mandya Dt. The program was jointly organized by **NSS Unit of JSS AHER**, **NSS Unit of Maharani's College**, Mysuru and **Vruksha Ropana** , an volunteer organization, Halaguru, Malavalli Tq, Mandya Dt. About 4 lakh seed balls were sowed in **Muthathi forest** stretching around 12 km deep inside the forest. About 100 NSS volunteers/Officers/Staff of JSS AHER and Maharani's College Mysuru were participated.

The activity was conducted to create awareness about deforestation and a need for reforestation in the young minds. All participants felt that, such initiatives are very much important in keeping our future forest green and dense. The activity was started at 9 am and ended by 5 pm and the volunteers participated

enthusiastically. The activity was initiated with brief talk on concept of Seed Ball by Mr. Ashvin, the main volunteer of **Vruksha Ropana** volunteer organization and the person behind this activity. He briefly explained the concept of seed ball and how the seed balls were prepared. He appreciated JSS University movement **GROW GREEN** concept and thanked all volunteers for joining hands with his volunteer organization. Dr. K.L. Krishna, NSS Program Coordinator of JSS AHER briefed about the program and asked all volunteers to actively participate and help this movement to get success. He explained precaution to be followed inside the forest and guided how to go ahead with seed ball sowing. Mr. Praveen Kumar, Forest officer, Muthathi Forest and his team guided the route and helped the program in successful completion. The activity was coordinated by Mr. Ashvin, Vruksha Ropana, a volunteer organization and Dr. K.L. Krishna, NSS Program Coordinator, JSS University. NSS Program Officers, Dr. Gowrav MP, Dr. Sunilkumar D, Dr. Raghu Ram Achar, Mrs. Manonmani, Dr. Jagadish and staff Dr. H.V. Gangadharappa, Dr. M.P. Gowrav and Mr. Hemanth were present in the program.


JSS UNIVERSITY, MYSURU
ATIONAL SERVICE SCHEME (NSS
JSS MEDICAL COLLEGE UNIT
National Service Scheme (NSS)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TEAK TREE FOREST WITH IN JSSAHER CAMPUS -CLEAN AIR & HOME FOR THOUSANDS OF SPECIES

Teak Tree Forest with in JSSAHER Campus - Home for thousands of species The teak forests are under pressure because of the high value of teak timber. The teak tree forests are also suffering from overexploitation and conversion to agricultural land. JSSAHER protects and preserves the teak forests remain at its Campus in Mysore as a part of its conservation strategy. This Teak Tree Forest is a home for thousands of living species helping the life on land and climate change .

7. RAIN WATER HARVESTING AND RETENTION FACILITY IN THE CAMPUS




Conservation of water resources - Rainwater harvesting and wastewater treatment

To meet the needs and sustainable management of fresh water, the rainwater harvesting, and utilization systems have been established in all the campuses of the university to aid towards the greater objectives of water management and conservation and increasing recharge of groundwater by capturing and storing rainwater, rainwater harvesting from rooftop run-offs and natural water bodies and the community development. The below mentioned models are established in the various buildings based on the size of the building and the extent and topography of the land.

- Simple roof water collection systems - Most of the rooftop rainwater harvesting has been completed by constructing five water storage structures with a storage capacity of 1000 m3.
- Land surface catchments – a simple way of collecting rainwater by retaining the flows (including flood flows) of small creeks and streams in small storage reservoirs (on surface or underground) created by low-cost dams
- Collection of storm water – The surface runoff collected in storm water ponds/reservoirs is subject to a wide variety of contaminants and every effort is made to keep these catchments clean.

Rainwater purifying process


MEMBRANE OUTLET
CONTROL PANEL
PRODUCT FLOW
RE-CIRCULATION FLOW
REJECT FLOW
DOWAC
Nano Filtration Sys
JSS MEDICAL COLLEGE

8. ENERGY CONSERVATION STRATEGIES

Solar Projects at the Institution of JSSAHER

Solar panels have been installed which has considerably brought down the power consumption by at least 50% compared to earlier years. To set an example, the institution shares some of the electricity generated by solar energy to the local electricity board. Proper signages have been installed advising the users to always switch off the electricity when not in use. Most of the lights have been replaced by energy saving bulbs and LEDs to save power. Continuous monitoring and maintenance of Air Conditioning, generators and other power appliances are being carried out to ensure that no power is being wasted under any circumstances.

9. ACADEMIC AND RESEARCH CONTRIBUTION TOWARDS SDG 13

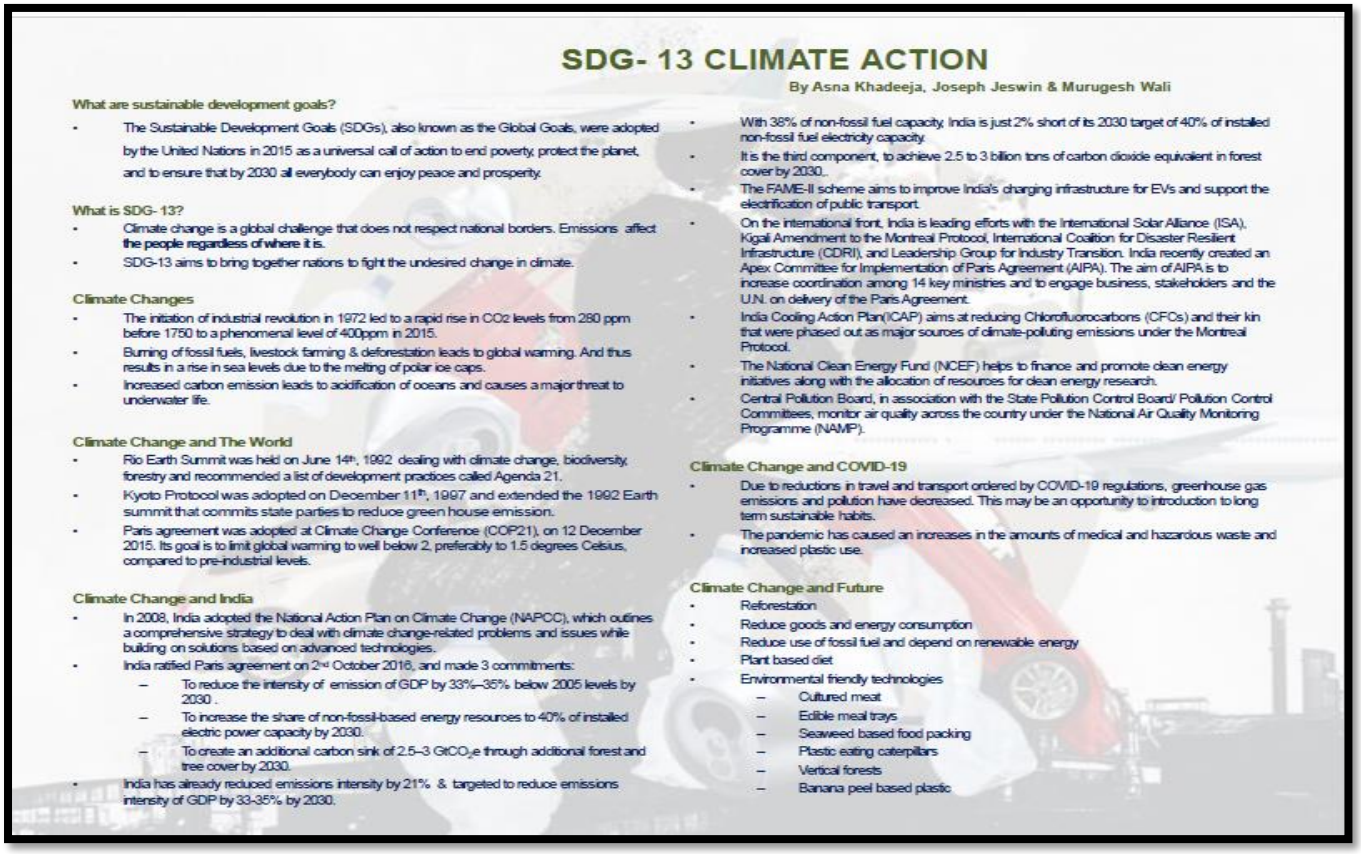
Academic Activities	
Curriculum	"Education can play a major part in the required transformation into more environmentally sustainable societies, in concert with initiatives from government, civil society and the private sector," said a 2016 UNESCO report titled Education for people and planet which pushes for education as one of the tools for dealing with the environmental crisis caused by human behaviour. Education and the core curriculum shape's values and perspectives of the young students who are undergoing courses. The syllabus contributes to the development of skills, concepts and tools that can be used to reduce or stop unsustainable practices and with this ideology the course of Environment studies was introduced in the first-year bachelor degree. The subject has core concepts and methods from ecological and physical sciences and their application in environmental problem solving and make them understand the transnational character of environmental problems and ways of addressing them, including interactions across local to global scales. The outcome which was intended to be achieved was to reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world and deepen the Understand the utility of environmental source.
Teaching & Learning	Fire drill emergency department workshop was carried on in emergency department to MBA- hospital administration department students.41 students had undergone this training along with faculty of MBA department. Program name-Fire drill Participants-MBA hospital administration students Co coordinators- Fire department of JSS hospital Venue-JSS hospital The main objectives achieved through the drill were - • To ensure the safe and effective use of all exits facilities in case of actual fire emergency. • To acquaint hospital personnel with hospital fire alarm signal with actual emergency courses of action called for under different fire conditions. • To achieve an orderly and safe evacuation under proper discipline. • To prevent panic, confusion, injury and loss of lives in case of actual fire. Following were the procedure explained and demonstrated by the hospital staff to administration students who could learn and in the future would be responsible for emergencies which may arise in their own hospital during their career as administrators. Evacuation Procedure 1. Floor warden shall ensure that all occupants of the floor assigned to him are evacuated or safe areas. Therefore headcount is to be done at the evacuation area. Report missing person. 2. Thorough research by designated SEARCERS shall be conducted to ensure that all occupants have been brought safer place. 3. Recall signal

10. IMPROVE EDUCATION, AWARENESS-RAISING AND HUMAN AND INSTITUTIONAL CAPACITY ON CLIMATE CHANGE MITIGATION, ADAPTATION, IMPACT REDUCTION AND EARLY WARNING.

The college takes up annual social responsibility causes to implement innovative ideas and promote awareness to the public with respect to climate change. Among these programs, we undertake outreach programmes- door to door campaigning, awareness rally, blood donation camps with a cause, tree sapling plantation drives.

JSSAHER also has included a subject Environmental Sciences in all courses as stipulated by UGC and organizes Environment Day and Water Day. JSAHER believes in preserving traditional medicine and has established medicinal plants garden and promotes eco-friendly cultivation practices by organizing medicinal plants exhibition in JSS Urban Health Centre.

POSTER ON SDG-13 BY BIOMEDICAL SCIENCE INTERNS FOR SDG POSTER COMPETITION



SDG- 13 CLIMATE ACTION

By Asna Khadeeja, Joseph Jeswin & Murugesh Wali

What are sustainable development goals?

- The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call of action to end poverty, protect the planet, and to ensure that by 2030 all everybody can enjoy peace and prosperity.

What is SDG- 13?

- Climate change is a global challenge that does not respect national borders. Emissions affect the people regardless of where it is.
- SDG-13 aims to bring together nations to fight the undesired change in climate.

Climate Changes

- The initation of industrial revolution in 1972 led to a rapid rise in CO_2 levels from 280 ppm before 1750 to a phenomenal level of 400ppm in 2015.
- Burning of fossil fuels, livestock farming & deforestation leads to global warming. And thus results in a rise in sea levels due to the melting of polar ice caps.
- Increased carbon emission leads to acidification of oceans and causes a major threat to underwater life.

Climate Change and The World

- Rio Earth Summit was held on June 14th, 1992 dealing with climate change, biodiversity, forestry and recommended a list of development practices called Agenda 21.
- Kyoto Protocol was adopted on December 11th, 1997 and extended the 1992 Earth summit that commits state parties to reduce green house emission.
- Paris agreement was adopted at Climate Change Conference (COP21), on 12 December 2015. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

Climate Change and India

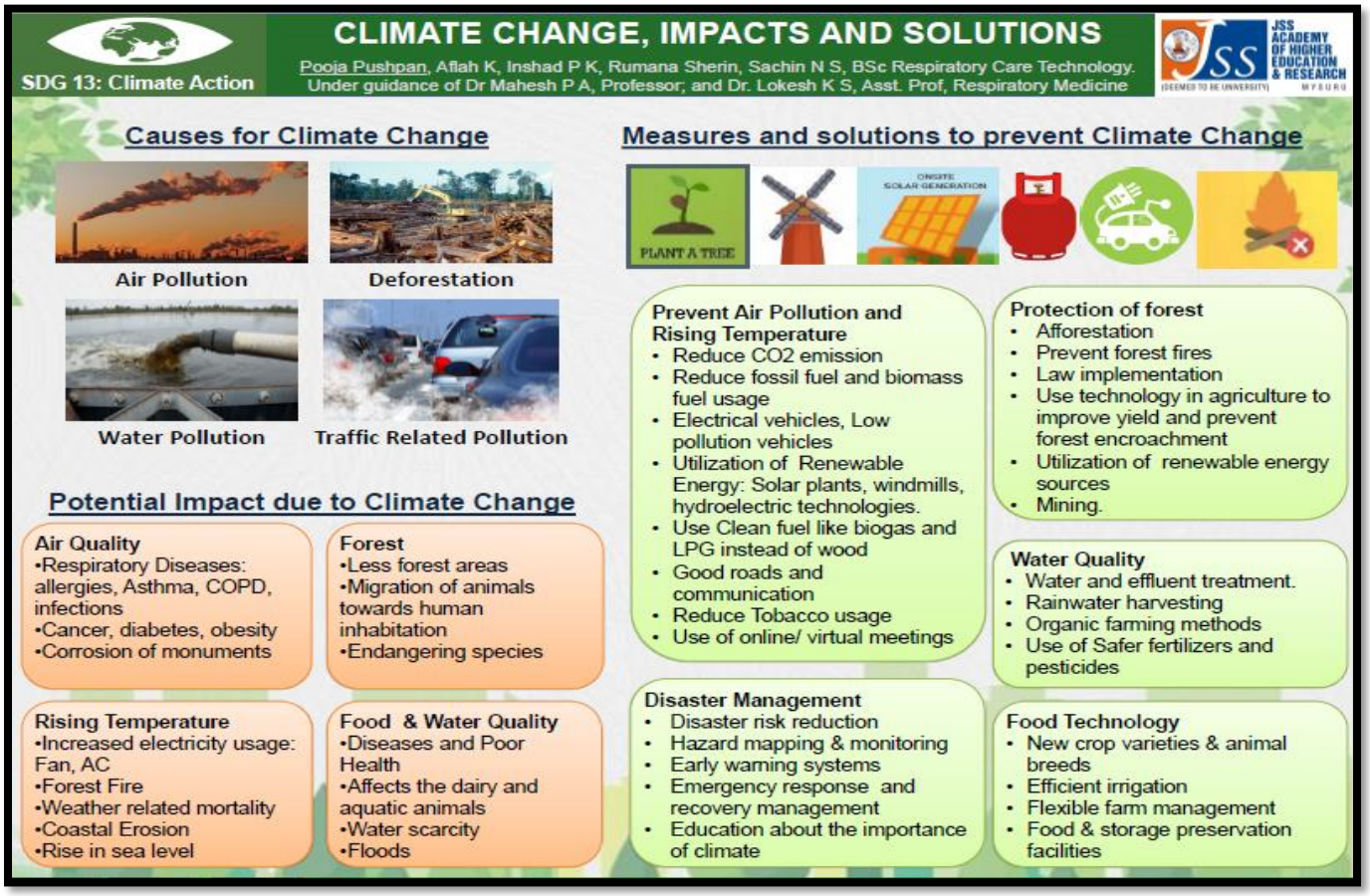
- In 2008, India adopted the National Action Plan on Climate Change (NAPCC), which outlines a comprehensive strategy to deal with climate change-related problems and issues while building on solutions based on advanced technologies.
- India ratified Paris agreement on 2nd October 2016, and made 3 commitments:
  - To reduce the intensity of emission of GDP by 33%–35% below 2005 levels by 2030 .
  - To increase the share of non-fossil-based energy resources to 40% of installed electric power capacity by 2030.
  - To create an additional carbon sink of 2.5–3 $GtCO_2e$ through additional forest and tree cover by 2030.
- India has already reduced emissions intensity by 21% & targeted to reduce emissions intensity of GDP by 33-35% by 2030.
- With 38% of non-fossil fuel capacity, India is just 2% short of its 2030 target of 40% of installed non-fossil fuel electricity capacity.
- It is the third component, to achieve 2.5 to 3 billion tons of carbon dioxide equivalent in forest cover by 2030..
- The FAME-II scheme aims to improve India's charging infrastructure for EVs and support the electrification of public transport.
- On the international front, India is leading efforts with the International Solar Alliance (ISA), Kigali Amendment to the Montreal Protocol, International Coalition for Disaster Resilient Infrastructure (CDRI), and Leadership Group for Industry Transition. India recently created an Apex Committee for Implementation of Paris Agreement (AIPA). The aim of AIPA is to increase coordination among 14 key ministries and to engage business, stakeholders and the U.N. on delivery of the Paris Agreement.
- India Cooling Action Plan(ICAP) aims at reducing Chlorofluorocarbons (CFCs) and their kin that were phased out as major sources of climate-polluting emissions under the Montreal Protocol.
- The National Clean Energy Fund (NCEF) helps to finance and promote clean energy initiatives along with the allocation of resources for clean energy research.
- Central Pollution Board, in association with the State Pollution Control Board/ Pollution Control Committees, monitor air quality across the country under the National Air Quality Monitoring Programme (NAMP).

Climate Change and COVID-19

- Due to reductions in travel and transport ordered by COVID-19 regulations, greenhouse gas emissions and pollution have decreased. This may be an opportunity to introduction to long term sustainable habits.
- The pandemic has caused an increases in the amounts of medical and hazardous waste and increased plastic use.

Climate Change and Future

- Reforestation
- Reduce goods and energy consumption
- Reduce use of fossil fuel and depend on renewable energy
- Plant based diet
- Environmental friendly technologies
  - Cultured meat
  - Edible meal trays
  - Seaweed based food packing
  - Plastic eating caterpillars
  - Vertical forests
  - Banana peel based plastic



SDG 13: Climate Action

CLIMATE CHANGE, IMPACTS AND SOLUTIONS

Pooja Pushpan, Aflah K, Inshad P K, Rumana Sherin, Sachin N S, BSc Respiratory Care Technology.
Under guidance of Dr Mahesh P A, Professor; and Dr. Lokesh K S, Asst. Prof, Respiratory Medicine

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Causes for Climate Change

Air Pollution

Deforestation

Water Pollution

Traffic Related Pollution

Potential Impact due to Climate Change

Air Quality
- Respiratory Diseases: allergies, Asthma, COPD, infections
- Cancer, diabetes, obesity
- Corrosion of monuments

Forest
- Less forest areas
- Migration of animals towards human inhabitation
- Endangering species

Rising Temperature
- Increased electricity usage: Fan, AC
- Forest Fire
- Weather related mortality
- Coastal Erosion
- Rise in sea level

Food & Water Quality
- Diseases and Poor Health
- Affects the dairy and aquatic animals
- Water scarcity
- Floods

Measures and solutions to prevent Climate Change

Prevent Air Pollution and Rising Temperature
- Reduce CO2 emission
- Reduce fossil fuel and biomass fuel usage
- Electrical vehicles, Low pollution vehicles
- Utilization of Renewable Energy: Solar plants, windmills, hydroelectric technologies.
- Use Clean fuel like biogas and LPG instead of wood
- Good roads and communication
- Reduce Tobacco usage
- Use of online/ virtual meetings

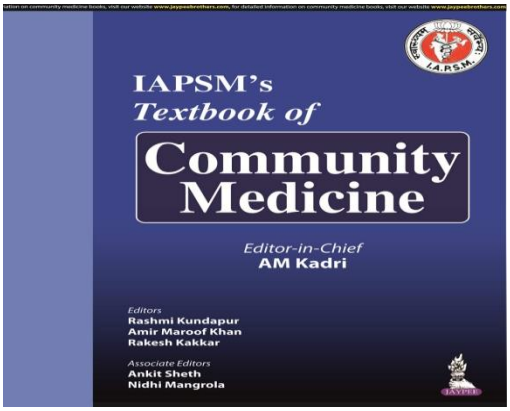
Protection of forest
- Afforestation
- Prevent forest fires
- Law implementation
- Use technology in agriculture to improve yield and prevent forest encroachment
- Utilization of renewable energy sources
- Mining.

Water Quality
- Water and effluent treatment.
- Rainwater harvesting
- Organic farming methods
- Use of Safer fertilizers and pesticides

Disaster Management
- Disaster risk reduction
- Hazard mapping & monitoring
- Early warning systems
- Emergency response and recovery management
- Education about the importance of climate

Food Technology
- New crop varieties & animal breeds
- Efficient irrigation
- Flexible farm management
- Food & storage preservation facilities

TEXT BOOK OF COMMUNITY MEDICINE



Dr Praveen Kulkarni and Dr Sunil Kumar D, Associate Professors in the Department of Community Medicine have contributed a chapter on Climate Change and Health in IAPSM Text Book of Community Medicine- 2nd edition. Publishers: Jaypee brothers, New Delhi

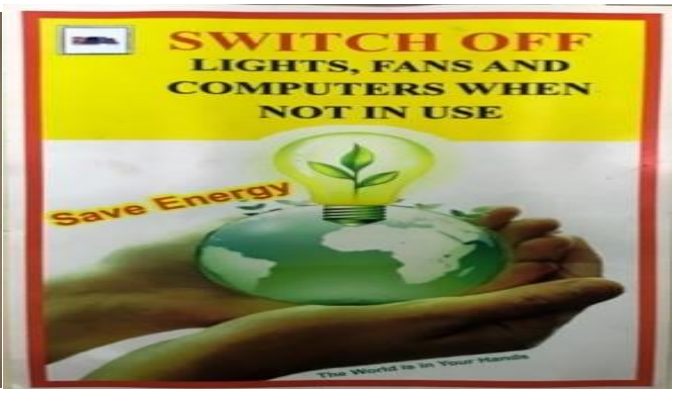
11.PUBLICATIONS RELATED TO THIS SDG

JSSAHER has also actively involved research activities and publishing a good number of research findings in reputed journals and sharing related knowledge with global communities towards the mitigation of climate change and sustainable environmental management.

1. Dr.PA Mahesh, Health Effects Caused By Air Pollution-From Rnaseq To Populations, Sept.2020, American Thoracic Society 2020 International Conference, Vol.201, (INTERNATIONAL). (Related SDG: 03, 11)
2. Dr. Sunil Kumar D., Jose Jom Thomas., Dr Prakash B., Dr Narayana Murthy M.R.., Sulochanadevi B. Chakrashali, Auditory and non-auditory health effects of noise exposure among people working near traffic junctions in Mysuru city, Karnataka, Jul.2020, International Journal of Community Medicine and Public Health, Vol.7, Issue.4, P-1427-1431, ISSN-2394-6032 (NATIONAL).
3. Dr Mahesh P.A., Clinical, Epidemiological and Experimental Approaches to Assess Adverse Health Outcomes of Indoor Biomass Smoke Exposure: Conclusions from An Indo-Swedish Workshop in Mysuru, January 2020, Sept.2020, Toxics, Vol.8, Issue.3, P-1-17, ISSN-2305-6304 (INTERNATIONAL). (Related SDG: 03,06)
4. Dr Praveen Kulkarni, Participatory Workshop-Based Intervention for Better Preparedness and Awareness About Disaster Management Among Accredited Social Health Activists in India: A Brief Report Sept.2020, Disaster medicine and public health preparedness, Vol., Issue., P-1-3, ISSN-1935-7893 (INTERNATIONAL). (Related SDG: 03)
5. Dr Prakash B, Exploring the psychiatric symptoms among people residing at flood affected areas of Kodagu district, Karnataka, Sept.2020, Clinical Epidemiology and Global Health, ISSN-2452-0918 (INTERNATIONAL). (Related SDG: 03,10)
6. Dr Jayaraj B S, Lokesh K S, Dr Mahesh P A, Maheswarappa Mahendra, Dr Shyam Prasad Shetty B, Koustav Ganguly, Dr Chaya S K, Sravan Kumar V, Inflammatory Biomarkers Interleukin 1 Beta (IL-1β) and Tumour Necrosis Factor Alpha (TNF-α) Are Differentially Elevated in Tobacco Smoke Associated COPD and Biomass Smoke Associated COPD, 2021, Toxics, Vol.9, Issue.4, ISSN: 2305-6304 (INTERNATIONAL).
7. G V Venkataraman, Gregory Wellenius, Dr Mahesh P A, Michelle L Bell, Amruta Nori-Sarma, Dr Rajesh Kumar Thimmulappa, Jesse D Berman, Joshua L Warren, Steve Duane Whittaker, Erin R Kulick, NO2 exposure and lung function decline in a cohort of adults in Mysore, India, 2021, Environmental Research Communications, ISSN: 2515-7620 (INTERNATIONAL).
8. Sahana K S, Dr S Balasubramanian, Ms Stavelin Abhinandithe K, Dr Madhu B, Negative binomial regression modeling to assess the influence of climatic factors on the dengue incidence during an epidemic in Mysore district, 2021, International Journal of Mosquito Research, Vol.8, Issue.2, P-19-29, ISSN: 2348-5906 (NATIONAL).
9. Bellipady Shyam Prasad Shetty, George D'Souza, Dr Mahesh P A, Effect of Indoor Air Pollution on Chronic Obstructive Pulmonary Disease (COPD) Deaths in Southern Asia-A Systematic Review and Meta-Analysis, 2021, Toxics, Vol.9, Issue.4, P-1-15, ISSN: 2305-6304 (INTERNATIONAL).
10. Dr Mahesh P A, Chronic airflow obstruction and ambient particulate air pollution, 2021, Thorax, ISSN: 0040-6376 (INTERNATIONAL).
11. Stavelin Abhinandithe K., Sathya Velu R., Madhu B., Sahana S., Sowmyavalli R., Bibin John., Somanathan Balasubramanian, Modeling and Analysis of Influenza H1N1 outbreaks in India of the Creative Commons Attribution License (CC BY 4.0), 2021, International Journal of Trend in Scientific Research and Development, Vol.5, Issue.3, P-1166-1170, ISSN: 2456-6470 (NATIONAL).

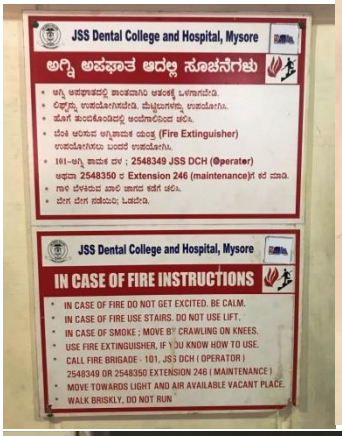
12.SIGN BOARDS OF JSSAHER SUPPORTING GREEN POLICY

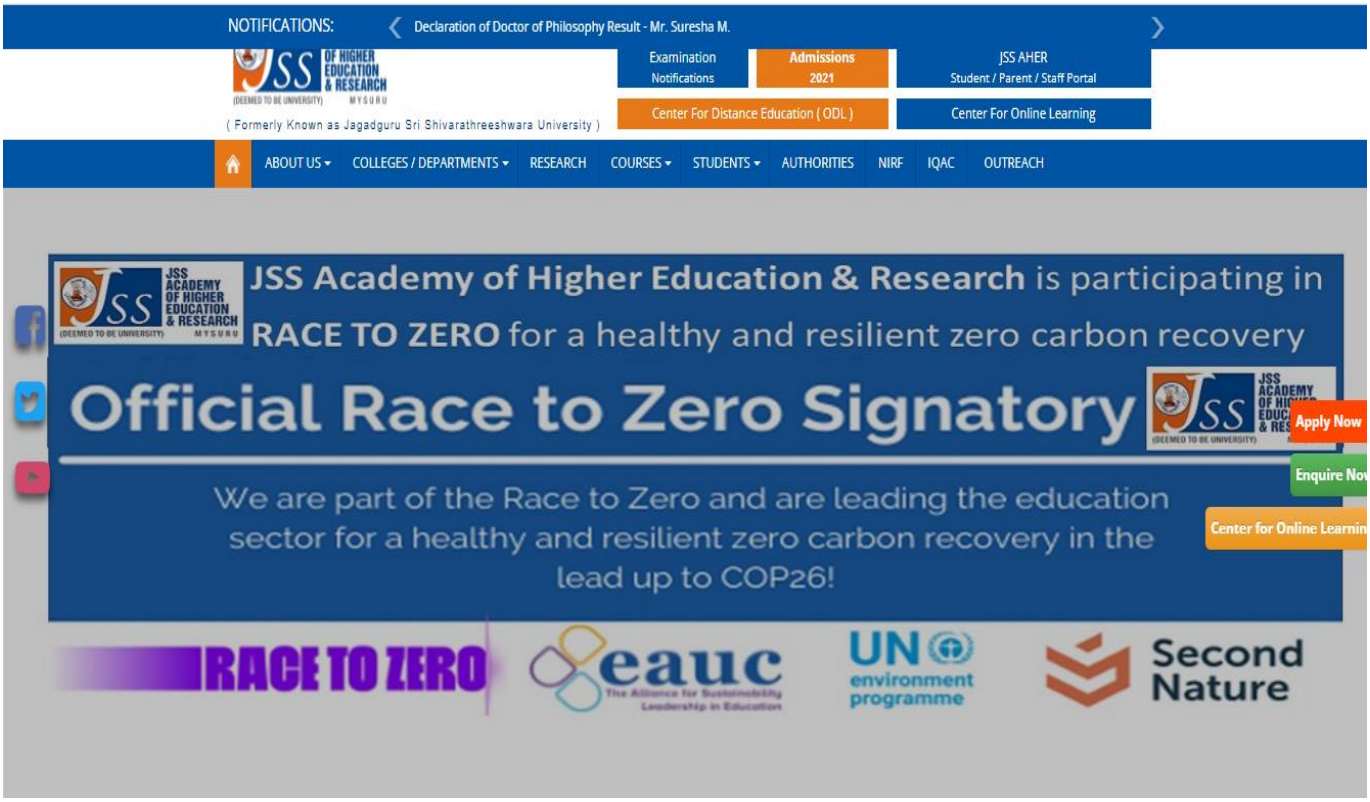
Sign boards of JSSAHER supporting Green Policy which emphasizes on the following to be strictly followed in all its campuses for maintenance of clean, green, and smart campus.



Sign Boards to Educate Patients Regarding Safety Measurements During Covid Pandemic

Sign Boards and Equipment's for Managing Fire Accidents





14. E-GOVERNANCE & REDUCING PAPER COMMUNICATION AT JSSAHER

USE OF ELECTRONIC COMMUNICATION AND PATIENT MANAGEMENT SOFTWARE

Technology innovation

- ICT integrated teaching and learning process.
- Online Intranet Portal named JSSUOnline and eLearn supporting teaching, learning and assessment
- Video assisted teaching.

We have developed an IT framework called JSSUOnline (www.jssuonline.com) supporting active learning and pedagogical innovations. This is also one of the green initiatives of the university to realize the objective of paperless administration. The portal also caters to various needs of the researching faculty, parents of the students and the staff of the University. With this system, learning and monitoring becomes easier and efficient. Most importantly, Student-student and staff-student communication is greatly facilitated by this technology. Through this system, we are now able to deliver educational resources to our students anywhere, anytime and on any computing device. Every student undergoing the course and parents are provided with a unique user IDs. Upon logging into the website, the capabilities are available to the students. Parents can also effectively monitor the progress of their ward as the information is available on everyday basis. JSSU Online is envisaged to provide a host of capabilities around educational resource delivery in a phased manner as part of our IT Roadmap.

rom: Dr R Ravindra [mailto:cio@jssuni.edu.in]
Sent: 08 June 2016 12:04
To: 'Registrar uni' <registrar@jssuni.edu.in>
Subject: Jssu Online Portal launch for the University Office on 10th June 2016 at 3 Pm to 4 Pm

No. REG/CIO/APP/DEV/004/2016-2017
Dear Sir / Madam,
Subject : JSSU Online Portal launch for the University office

As you are aware, as part of our efforts to support Active Learning and Pedagogical Innovations we have set up a Cloud based IT framework called **JSSU Online** through which we are now able to deliver our Educational resources to students anywhere and anytime on any computing device. JSSU Online is envisaged to provide a host of capabilities around educational resource delivery in a phased manner to all the constituent colleges of JSS University as part of its IT Roadmap.

Some of the capabilities which are going live this year are:

- Time Table Schedule & Management
- Teaching / Study Plans Automation
- Teacher's Diary for reporting
- Student's Attendance
- Digital Content Management at Course / Subject / Chapter and Topic level
- Multi location sharing of digital content

MCQ based Examination with the ability to build a Question bank with difficulty levels and then administering to the targeted audience anytime.
Apart from the above, some of the Business Process Management tool sets which are planned for roll out are

- Leave and Attendance Management for the entire University and Constituent Staff covering both Teaching and Administrative Staff - **Ready for launch**
- Leader Messaging – Ready for launch
- eNotice Board – Ready for launch
- Payroll linked to Leave and Biometric - Planned for the rollout during Aug 2016
- Research Profile Management – Planned for mid July rollout.
- Modules to support paperless office – Circulars, non statutory Approvals etc are planned for automation by Dec 2016.

JSSU Online Framework is envisaged to continuously evolve under a strategic operating model fulfilling many aspects of our University requirements in its quest to achieve excellence.
We have organized an introductory session for our staff as below on **10th June 2016** at **Gowrishankara Auditorim, JSS Dental College**.

Officers of the University 3 pm to 4 pm
All other Office Staff 4 pm to 5 pm

It is envisaged that this portal enables the streamlining both academic and administrative processes of the University in a phased manner. You are requested to send your department staff for this training and participate yourself without fail and take this initiative forward.
REGISTRAR
-

With Kind Regards,
Dr R Ravindra, M.B.A., Ph.D.,
Chief Information Officer

15. AWARENESS PROGRAM SUPPORTING CLIMATE CHANE ACTION OF JSSAHER

Demonstration of Fire Extinguisher

Fire extinguishing demonstration was given to the Teaching & Non- Teaching Staff of JSSDCH, Mysore by Mr. Satyanarayan, M/s Fire Cools, Mysore on 19/10/19.

Awareness programme to ASHA workers

Awareness programme and training was organized to ASHA workers at Varuna village panchayath office 09/01/2020. There are 22 ASHA workers participated in the programme. In the programme guest lecture was taken and explained about ill effects of tobacco and what are the techniques were available to stop smoking. All the participants told the programme is very much beneficial and asked us to conduct similar programmes in every 6 months.

On 20th January 2021, Department of Public Health Dentistry, NSS UNIT JSS Dental college and Hospital,Mysuru conducted health and hygiene awareness programme at Dandikere, rural village in Karnataka. The programme was headed by Dr.Thippeswamy and the house surgeons.To spread the awareness to all the people, the House surgeons were paired up and sent to individual houses of village. House surgeons carried pamphlets and hand sanitizers for illustrating hand hygiene technique and various hygiene methods to be practiced during the pandemic. People were trained about health hygiene techniques and were asked to repeat the procedure until they could do it perfectly. Children from Aganawadi were educated about the sanitization procedure and reciprocated the same. The programme was a big success.

World Environment Day

Faculty of JSS Dental College and Hospital actively participated in World Environment Day 2021 which was observed on 9th June-2021. The programme was organized by NSS unit of JSS Dental College and Hospital. Saplings were distributed to general workers of the hospital and they were appraised about the importance of good environment, water and energy conservation.

The programme was graced by Dr Ravindra S, Principal, Dr Chandrashekar B R, Vice Principal, Dr Thippeswamy, NSS Co-ordinator, Dr Maurya M, Lecturer, Dept. of Public Health Dentistry and attended by non-teaching staff of the institution.

National Service Scheme (NSS) of JSS College of Pharmacy, Mysuru constituent college of JSS Academy of Higher Education & Research, Mysuru celebrated “World environment day” on 05th June 2020 with the theme “Time for Nature”. Dr. B. Manjunatha, Registrar, JSS AHER, Dr. P.A. Kushalappa, Director-Academics, JSS AHER, Dr. T.M. Pramod Kumar, Principal, JSSCPM along with other dignitaries planted about 25 plants as a mark of World Environment Day. Cloth bags were distributed to the staffs which are reusable and reduce plastic use and therefore preventing plastic pollution. Our Solutions are in the Nature Scientists have warned of the links between the mismanagement of biodiversity and ecosystems and the risks of transmission of infectious diseases to humans, up to the risk of a pandemic. The COVID-19 pandemic illustrates this responsibility in a dramatic way and at a global scale. Alongside scientists, many other voices are raising, including political, from private sector and civil society calling for transformations and breaks with these processes that are destroying the living fabrics of the planet, creating unacceptable inequalities and threatening our common future and that of the younger generations. This crisis shows us in a painful way our global dependencies and interconnections. Our common destiny as human beings living on Earth is irreversibly linked: we need each other, and this observation must now unite and bring us together. We are totally interdependent on healthy biodiversity for our own health, our economy, our food and our well-being. Our responsibility is to care for the life on Earth and to enable the conditions for its transmission to future generations.

National Service Scheme (NSS) of JSS University, Mysuru along with the constituent colleges celebrated World environment day on 05thJune 2018 in the premises JSS Medical institutions campus. The rally was inaugurated by JSS Mahavidyapeetha Executive secretary Shri C.G. Betsurmath, Dr. B. Manjunatha, Registrar, JSS AHER , Dr. P.A. Kushalappa, Director- Academics, JSSAHER and many other dignitaries.

JSS University along with the constituent colleges and NSS units celebrated Observance of Swacctha Pakawara Programme

Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

The college campus possesses a lush green campus with seasonal trees and maintenance of garden has been done from time to time to keep it neat and clean. For promoting green environment resilience we initiated car and scooter pooling for the staff and students who resides in same locality.

Shortly promotion of cycling will be done in the college campus along with 'No Vehicle Day' once in a month. The students have already initiated this and few of the students ride their bicycles and come to college.

In short term goal we are looking for organic farming to cater the need of vegetables and fruits have been proposed and for that land will be finalizing soon. The college has herbal garden where many medicinal plants are displayed which provides the fresh air and relives from the ailments.

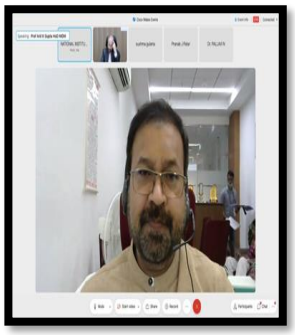
To maintain cleanliness we are also looking for outsourcing the housekeeping facility in the campus. Planting of the tree sapling will be done in college and in tribal villages to keep environment green and eco-friendly.

RACE TO ZERO CAMPAIGN BY STUDENTS IN CYCLE

Webinar on Impact of Climate Change and Sustainable Development Goals

A webinar on "Impact of Climate Change and Sustainable Development Goals" on 22nd July, 2021, Jointly Organized by National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India and Department of Environmental Sciences, JSS Academy of Higher Education & Research, Mysuru, Karnataka.

Honourable Vice Chancellor of JSS Academy of Higher Education & Research, Mysuru, Karnataka, Dr. Surinder Singh unfolded the inaugural session extending his hearty greetings to all the esteemed dignitaries, key speakers, and participants of the programme. He expressed great pleasure in collaboratively working with NIDM.


Prof. Anil K Gupta (Head of ECDRM, NIDM) exposed us how the multi hazard –challenges, in approach towards management of disasters accentuates the need for risk reduction at the community level in India. Sir highlighted the impacts of Climate Change in India thus setting the tone and vision of the program through his remarkable and enlightening keynote address.Dr. Sushma Guleria, Assistant Professor, NIDM briefed about the Basics of Disaster Management. She very comprehensively discussed about the basic concepts, impacts and categories of disasters in relevance to the current context of pandemic. She also discussed about the Disaster Management Mechanism & Structure in India considering various agencies and organizations involved thus elaborating the various pre-disaster and post-disaster activities. In the concluding part of her presentation, Dr. Guleria talked on the relationship between disaster and development and the paradigm shift. Key points highlighted:

- Impacts of disaster
- Disaster management act 2005
- Sociological & psychosocial care
- Disaster identified by High Power Committee
- Economic/social/environmental vulnerability
- Pre disaster phase (early warning, prevention n mitigation measures)
- During disaster relief response search and rescue
- Post disaster reconstruction n rehabilitation.
- Sendai framework

Dr. Pranab J Patra is an Award winning Environment & Sustainability professional with 20 years of experience in the Non-profits. Currently he is the Chief executive of The Global Foundation for Advancement of Environment and Human Wellness, which works on a triple bottom-line philosophy: people, planet and profit. He shared comprehensive PPT on changing Climate Change and Sustainable Development Goals (Challenges and oppurtunities). Key points highlighted:

- Brief background and thematic area of Global Foundation for Advancement of Environment and Human Wellness (Indo American initiative)
- Causes and effect of climate change
- Increasing carbon dioxide
- The green house effect
- Global average surface temperature
- Global risk report
- Environmental challenges.
- Vulnerability of Indian hinterland by 2050
- Economic consequence of Climate change.
- Nature based solution

The Webinar programme concluded with the handling of queries of the participants by the esteemed speakers. Dr. PALLAVI N Department of Environmental Sciences, Faculty of Life Sciences JSS Academy of Higher Education & Research Mysuru presented the Closing Remark to all the senior officials of the institutions, the faculty members and all the participants from various states who actively participated in the Webinar programme and shared their vast knowledge and experiences during the programme.

Division of Geoinformatics of JSSAHER celebrated World GIS Day - Mapping the Future with GIS

JSSAHER celebrated the special event by conducting a webinar on "Mapping the Future with GIS" with keynote addresses by Dr Balasubramani K. and Mr Peejush Pani on 19th November 2020. The webinar intended to introduce the application of Geospatial Technology to solve real-world problems e.g. Climate Change, Smart Cities and disaster management. The keynote speakers emphasized the application of GIS & Remote Sensing in the study of water resource management and water-induced disasters.

16. INTEGRATE CLIMATE CHANGE MEASURES INTO NATIONAL POLICIES, STRATEGIES, AND PLANNING.

The college is regularly adding the hill and winter allowance as per government norms in salary structure to maintain the climate changes during winter.

Sl. No.	NAME OF FACULTY (TEACHING / NON-TEACHING/ADMIN) (As on December 2019)	Hill Allowance	Winter Allowance
	TEACHING STAFF		
1	Dr.Dhanabal S.P., Principal	1500	500
2	Prof.Chinnaswamy.K, Professor	0	0
3	Dr.Meyyanathan.S.N., Professor	1500	500
4	Dr.Duraiswamy.B, Professor	1500	0
5	Dr.Chandrasekar.M.J.N. Professor	1500	500
6	Dr.Anand Vijaya Kumar.P.R	1500	500
7	Dr.Gowthamarajan.K, Professor	1500	500
8	Dr.Ponnusankar.S, Professor	1500	500
9	Dr.Senthil.V, Professor	1500	500
10	Dr.Md.Afzal Azam, Vice Principal	1500	500
11	Mr.Nagarajan.J.S.K., Assistant Professor	1500	500
12	Dr.Kalirajan (a) Manivannan, Assistant Professor	1500	500
13	Dr.Suresh Kumar.R, Assistant Professor	1500	500
14	Dr.Nagasamy Venkatesh.D, Assistant Professor	1500	500
15	Dr.Vadivelan.R, Professor	1500	500
16	Dr.Krishnaveni.N, Professor	1500	500

17. JSSAHER SUPPORT TO UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE TO A GOAL OF MOBILIZING THE CLIMATE FUND THROUGH ITS CAPITALIZATION AS SOON AS POSSIBLE.

https://citytoday.news/suttur-mutt-jss-mahavidyapeetha-donate-rs-50-lakh-to-cm-relief-fund/

COVID-19: JSS Institutions Donate Rs.50 Lakh to Karnataka

Suttur Seer Sri Shivarathri Deshikendra Swamiji , the Chancellor of JSSAHER handed over a cheque for Rs.50 lakh to District Minister V. Somanna towards "Chief Minister's Relief Fund" in a fight against Coronavirus.The amount was a joint voluntary donation by Sri Suttur Mutt, JSS Mahavidyapeetha and employees of JSS Institutions.Present on the occasion were MP Pratap Simha, Mysuru DC Abhiram G. Sankar, JSS Mahavidyapeetha Executive Secretary Dr. C.G. Betsurmath, Secretary S. Shivakumaraswamy, JSS Academy of Higher Education & Research (JSS AHER) Pro-Chancellor Dr. B. Suresh, Mahavidyapeetha Finance Division Director S. Puttasubbappa and Collegiate Education Division's B. Niranjan Murthy.

COVID-19: JSS Institutions Donate Rs.5 Lakh Nilgiris District , Tamil Nadu

1) The COVID pandemic contribution we have done from the College to Chief ministers relief fund.
2) Donation made by the College for establishment of LAB at GMC&H, Ooty

Financial assistance to build COVID-19 special ward in Govt. Hospital, Ooty. Dr. S P Dhanabal, Principal issuing the Cheque to the Medical Superintendent Govt. Headquarters Hospital, Ooty in presence of Ms. Innocent Divya, District Collector, Nilgiris

https://starofmysore.com/suttur-mutt-donates-rs-5-lakh-to-zoo/

JSS Donates Rs.5 Lakh To Zoo

As **Mysuru Zoo** is closed for public due to COVID-19 lockdown, **Suttur Mutt** and JSS Mahavidyapeetha donated Rs.5 lakh towards maintenance of animals and birds at the Zoo.

The cheque was handed over by Suttur Seer Sri Shivarathri Deshikendra Swamiji, the Chancellor of JSSAHER to Zoo Authority of Karnataka (ZAK) Member-Secretary B.P. Ravi and Zoo Executive Director Ajit M. Kulkarni through Ministers Jagadish Shettar and S.T. Somashekar, at the Mysuru Branch of Suttur Mutt, foot of Chamundi Hill on Friday.MP Pratap Simha, MLAs S.A. Ramdas, G.T. Devegowda and B. Harshavardhan, former MLAs A.H. Vishwanath and M.K. Somashekar, Mayor Tasneem, Dy. Mayor Sridhar, JSS Mahavidyapeetha Executive Secretary Dr. C.G. Betsurmath, S.P. Manjunath, S. Shivakumaraswamy and others were present.It may be mentioned here that the Mutt has been donating Rs.1 lakh to Zoo every year to feed the denizens for a day, on the occasion of Jagadguru Sri Shivarathri Rajendra Mahaswamiji Jayanti on Aug.29.

Donation to CM Fund

JSS Employees House Building Co-operative Society donated Rs.2.5 lakh towards CM's COVID-19 Relief Fund.The cheque was handed over by Society President S. Puttarajappa and Directors Nanjundaswamy, S. Nandish and J.C. Rajanna in the presence of Ministers Jagadish Shettar, S.T. Somashekar, Byrathi Basavaraj, MP Pratap Simha and MLA S.A. Ramdas.

JSS ACADEMY OF HIGHER EDUCATION & RESEARCH
(DEEMED TO BE UNIVERSITY) MYSURU

INFRASTRUCTURE & MAINTENANCE POLICY

JSS ACADEMY OF HIGHER EDUCATION & RESEARCH, MYSURU

PREFACE

JSS Academy of Higher Education & Research is focused on medical and health-related studies, and comprises JSS Medical College, JSS Dental College and JSS College of Pharmacy at the main campus in Mysore as well as in Ootacamund, Tamil Nadu. With a view to extend the horizons in the field of Health Sciences, the Department of Water and Health, Department of Health System Management were also started.

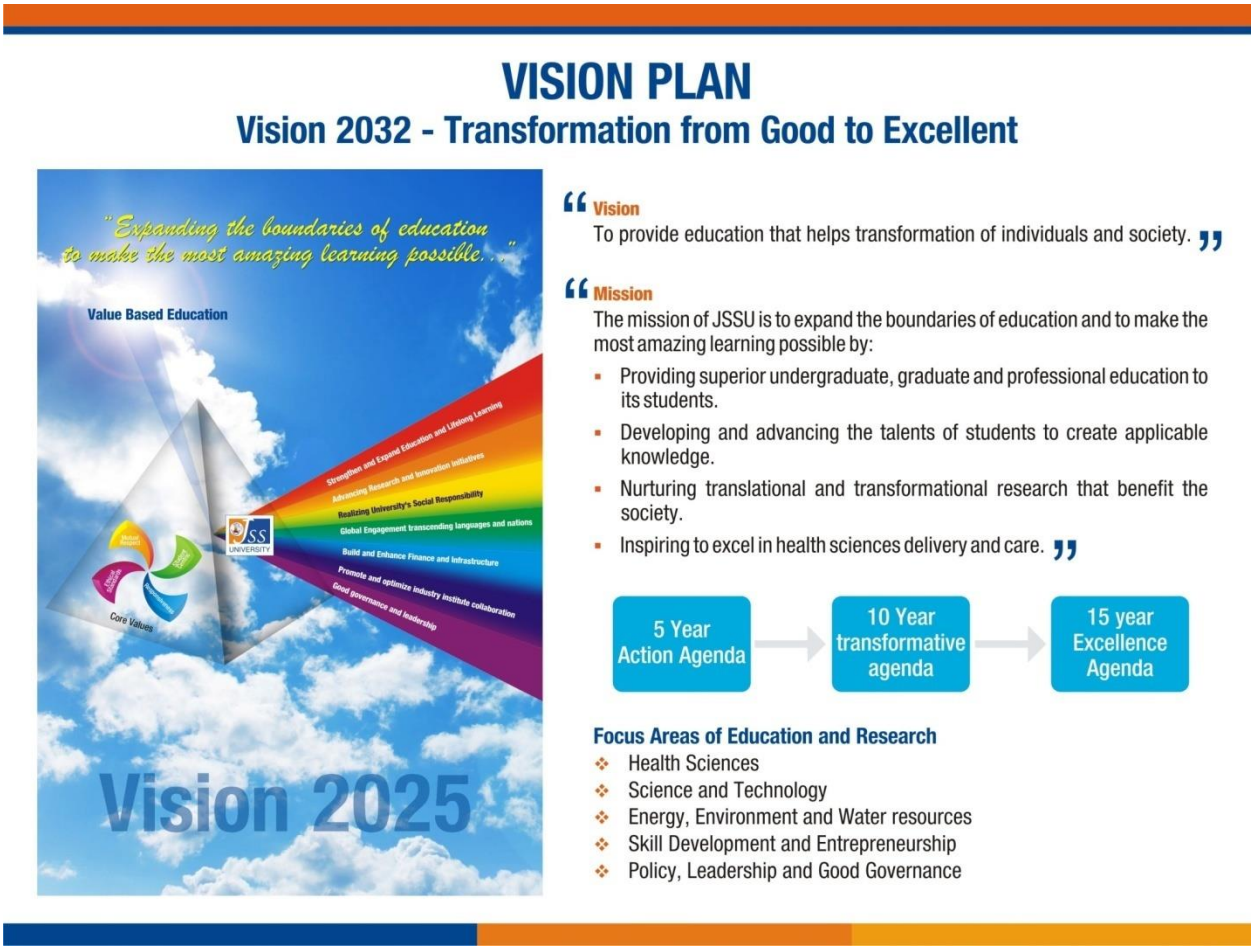
Over the years JSS Academy of Higher Education & Research has amassed several accolades. The institute is accredited with A+ Grade (CGPA of 3.47 out of 4) by National Assessment and Accreditation Council (NAAC) during 2018 re-accreditation. The Deemed to be University is continuously sustaining its position since three years in top 50 universities & top 10 pharmacy colleges in NIRF ranking. For the first time JSS AHER has been recognized globally by the Times Higher Education within top 500 universities and the institute has been listed in the band of 200-300 Universities across the world.

Continuing its efforts to impart quality education and infrastructure, JSS AHER has taken an initiative towards building up a Smart Campus by enhancing its teaching – learning resources, infrastructure, upgradation of technology, research & innovation, waste management and green environment resilience. The institute has planned to incorporate smart thinking which leads to sustainable living and working conditions especially among the students who are not only the main stake holders but also the future ambassadors of smart and sustainable life styles.

Table of Contents

Executive Summary

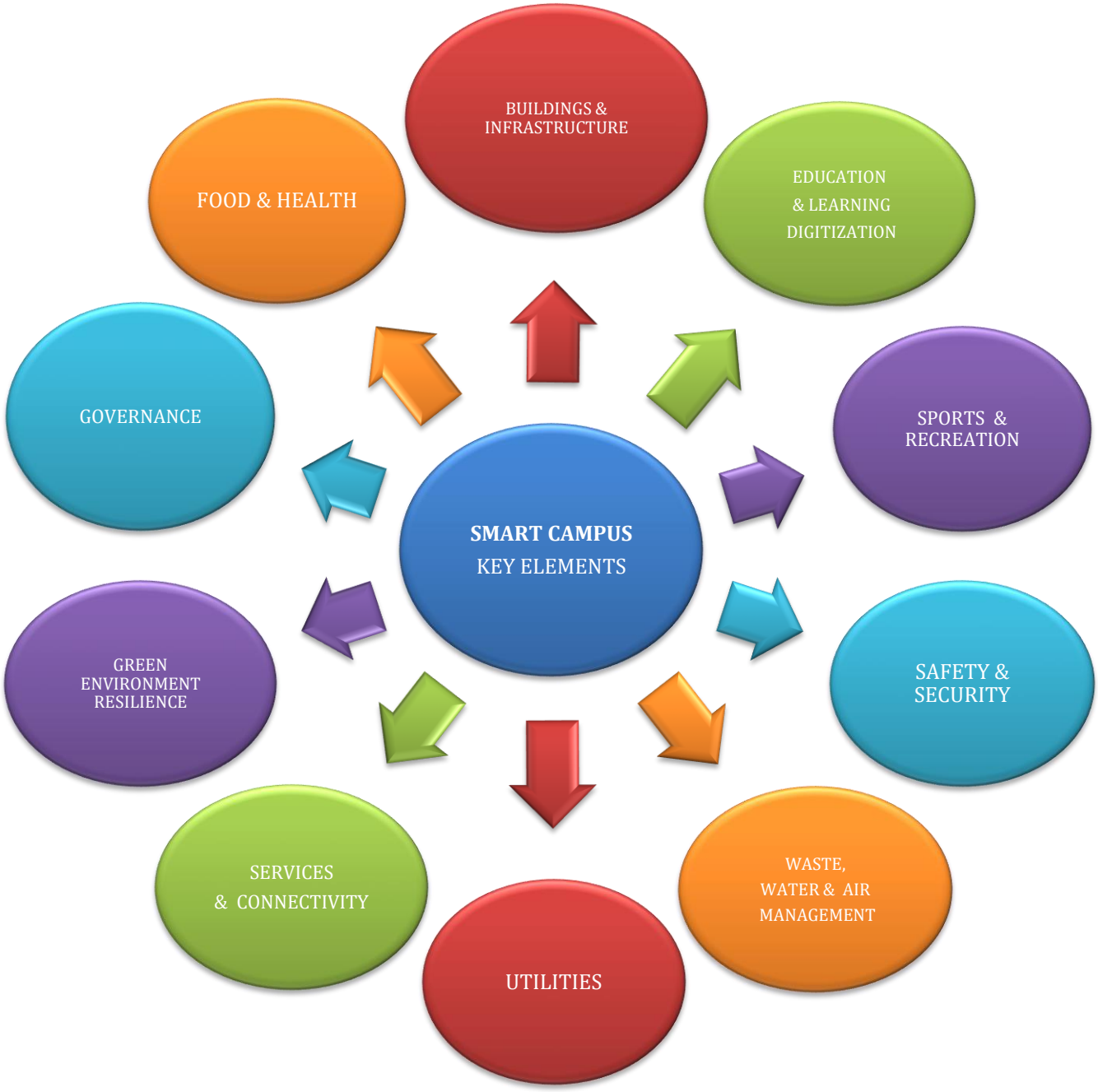
JSS group of institutions has a number of educational units at different regions and the JSS Academy of Higher Education & Research or shortly JSS AHER is one of the important milestones in the societal contribution of the parent organization, JSS Mahavidyapeetha and it has grown tremendously in just over a decade which is because of the continuous striving to fulfill the Vision & Mission of the Deemed to be University. The institute has set up a Vision Plan for the next 15 years to reach a status of excellence.

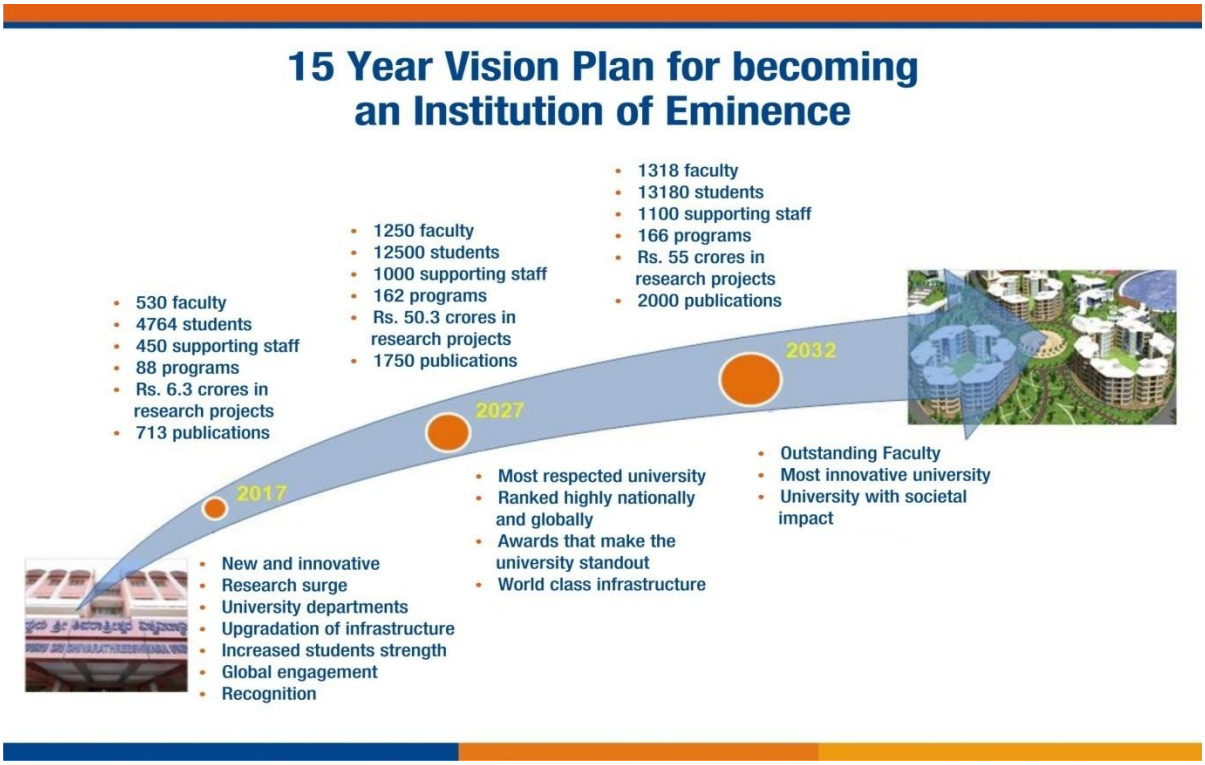


The institute is situated in a 43 acre land and comprises of Medical College, Dental College and University Departments (Faculty of Life Sciences and Health Systems Management Studies). JSS AHER has planned to adapt for a smart campus as per the need of the hour. The institute is focusing on 10 key elements that comprise smart campus viz. 1. Buildings & Infrastructure, 2. Education, Learning & Digitization, 3. Sports & Recreation, 4. Safety & Security, 5. Waste, Water, Air management, 6. Utilities – Water, Gas, Electricity, 7. Services & Connectivity, 8. Green environment resilience, 9. Governance & 10. Food & Health.

As an initial step, the institute has surveyed the available facilities which would enable either to enhance or add smart features. Further, discussions and feedback from stake holders are in progress which would add significant values towards the goal. Students are the central part of the smart campus as they are the ambassadors of a sustainable future.

To begin with, the institute has planned to focus on Swachhta Ranking, an initiative by the MHRD, Government of India which earmarks the potential of an institute to be smart.





JSS AHER has set a long term goal of establishing its new campus at Varuna with an estimated budget of Rs. 2000 Crores.

An over view of the architectural plan of the proposed Varuna campus

With the vision already set, the implementation of smart and best practices will be an important aspect to be followed for a smart and sustainable future of the employees and

the student communities at large. Executing the practices of energy conservation, reducing carbon footprints by sustainable food habits among the faculty and students, proper drinking water facilities, water re-usage, managing food, solid and other wastes, healthy living standards through habits of well being, pollution control within the campus achieved through pedestrian friendly atmosphere and reduction of vehicle commuting, increasing the green carpet and preserving open spaces and other institutional best practices are the key players of achieving a smart campus.

1. INTRODUCTION:

A Smart Campus actively learns from and adapts to the needs of its people and place, unlocking the potential of e-technology and enabling world-changing learning and research methodologies. Also to create an environment friendly atmosphere enabled with technology is the main goal of a smart campus. It is a modern application in the standard of the internet of things. The idea of building a "smart campus" implies that the institution will adopt advanced ICTs to automatically monitor and control all the facilities on campus. The students and staff members will benefit from location-aware services for using campus equipments and collaboration services. This will add values for students and increases the attractiveness of the campus. New emerging technologies have changed human lifestyles dramatically. The smart campus implements an IoT-based system to a selected part of campus like the Campus Environment, Campus Security, Campus Parking, Campus Building, Campus offices, and classroom to create smart environment, smart security, smart building, smart parking, smart offices, and smart classrooms.

Apart from focusing on technology, smart campuses are inevitable to restore environment and resources and also help the student communities for a smart and sustainable future. There are more than 750 universities, 40,000 colleges and institutes, and 1.5 million schools in India where around 200 to 300 million students are engaged in learning. Apart from being a significant consumer of energy, water and other utility and material resources, the educational campuses provide captive young thinkers action-based education on sustainable development. They are the spaces bubbling with potential opportunities to create skilled and 'job-ready' professional force.

Government of India has initiated a project on smart campuses throughout the country. The project is flagship activity of Technology, Education, Research and Rehabilitation for the Environment (TERRE) Policy Centre, a think-tank and action platform for sustainable development. It is called Smart Campus Cloud Network (SCCN).

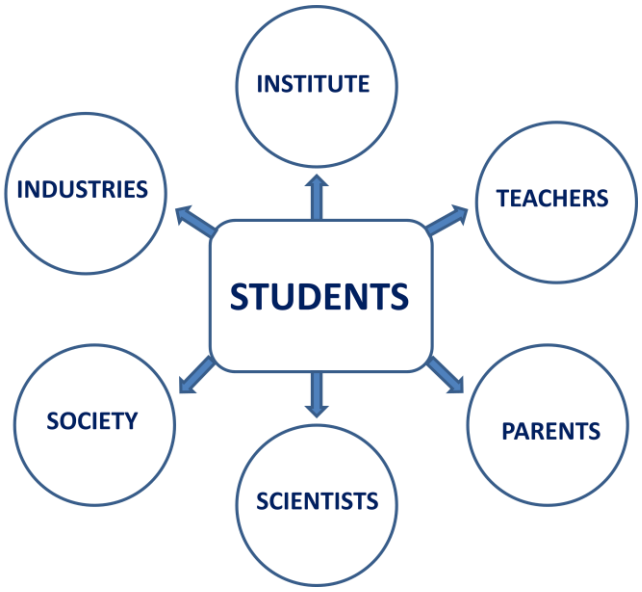
A smart campus is achieved by integrating sustainability to every component of an institute including building structures, renewable resources, digitalization through internet of things (IoT), bringing together the institute, stake holders, faculty and external members to understand the necessity of a sustainable and environment friendly campus.

JSS AHER has established its State of Art Campus using cutting edge technology. In order to achieve the smart campus status the institute and the constituent colleges have initiated the process of implementing technologies like

1. Smart Physical Security and Surveillance
2. Smart Wi-Fi Enabled Campus
3. Smart Metering
4. Smart Recycling Process
5. Smart Transportation System
6. Smart Energy Conservation and Utilization practice
7. Smart Hostel Management
8. Smart Canteen/food court management

For meaningful and successful sustainability programs in campus we need to

- Set clear strategies and goals
- Have a comprehensive approach
- Integrate students, faculty, staff and external partners
- Initiate pilot projects in several areas involving students
- Plan policies, financial resources, facilities management, curriculum, sustainability literacy, ecosystems, land use, energy resources, etc.



Stake holders involved in the building of a smart campus with students occupying the central position

2. SMART CAMPUS POLICY

I. OBJECTIVE:

- To embed smart technology into daily life of the campus, providing an opportunity for the development and application of innovation and technology to support a smart campus.
- To integrate an enhanced process and programme focused on energy, materials, security, health, transport and environment management.
- To focus on maintaining "Eco friendly institution" through best practice.
- To educate students on the importance of sustainability for a smart future
- To provide world class facilities to enable nationally and internationally renowned industrial/institutional partners to co-locate on the campus.

II. SMART CAMPUS INITIATIVES:

a) Over all activities:

- The Institute implemented CCTV cameras for the security of students day and night from the year 2010.
- The surveillance has built in analytic and intelligence for immediate remedial measures.
- Students are always connected to smart Wi-Fi.
- Healthy environment to support the mental, physical and social well being of the students and staff of the Institute.
- Daily power and water consumption data per student and room basis are captured and analyzed for reducing consumption cost.

b) Students Centric Smart Campus:

- Students are ensured a safe and secure homely atmosphere and are being monitored round the clock.
- Students have high speed internet both on campus and hostel rooms.
- Smart portal has a great impact on both students and stakeholders who are directly involved in daily hostel operations.
- Students are involved in the making of smart campus through several mini and major projects.

c) ICT Based Smart Campus:

- Physical security of students in the campus was a big challenge.
- 400 CCTV cameras are in operations for surveillance at all times.
- Internet plays a vital role in enabling students to pursue their academic goals. Internet with adequate band width was provided to make the campus Wi-Fi enabled.

- Optimization and improvement can only be brought about by identifying consumption patterns. The goal was to reduce the consumption of water and electricity to the lowest levels possible. Smart Metering was implemented for taking optimal decisions.
- A large number of students join every year. University needed a SMART portal where in all services are taken care centrally from student entry in hostel and to their exit. Smart Portal was made operational for connectivity with students at all times.

d) Environment Friendly Smart Campus:

- In order to minimize energy usage, improve the efficiency of all energy/ resources (natural resources, water, electricity) consuming systems and equipment, and improve the environment in all facilities, JSS AHER has adopted an energy / resources conservation and recycling policy.
- Conservation of energy and natural resources and recycling process is an integral part of JSS AHER facilities' design and usage.
- The University employs a variety of energy conservation, recycling, and other techniques to lessen the consumption of resources and achieve the lowest feasible life cycle costs.
- Energy conservation measures will be achieved by using the most cost-effective, energy-efficient approach with consideration given for flexibility of use and future remodeling convenience. Recycling efforts are encouraged at the Institution/department level.
- All faculty, staff, students, design consultants, and construction contractors observe energy and resource conservation measures employed by the campus.
- The Campus Facilities Maintenance & Management Authority- Deputy Registrar shall be the principal coordinator of all design disciplines, which includes responsibility for the implementation of this policy.
- Constituent Colleges & Departments are responsible for internal energy conservation and recycling efforts.
- The Transport Policy provides the Institute with a standard procedure for the acquisition, enhancement, use, control, maintenance, repair, checking fuel efficiency and disposal of the Institute's vehicles and for the management of related forms of transport engaged for Institute activities.

III. LONG TERM GOAL:

The long-term strategy of the University focuses on the creation of a world-changing, connected, healthy and vibrant university campus. To achieve the goal, the Institute will concentrate on:

a) Digital Environment

- Open, flexible, integrated, interoperable, secure and scalable ICT architecture;
- Sense, capture, monitor and evaluate data to support and study the performance of the campus in real time.

b) Integrated Urban Energy Systems

- Low carbon, low impact energy in a complex urban environment, focusing on generation, storage, distribution and management.

c) Data-driven Infrastructure Innovation

- Resilient infrastructure systems
- Innovation in infrastructure design and delivery
- Building Information Modeling (BIM) for design and life-cycle performance.

d) Health & Wellbeing

- Evaluate, understand and improve the physical environment
- Develop new practices for workplace wellbeing
- Develop the technology, including wearable technology, to measure and influence health related behavior.

e) Student Experience and Pedagogy

- Data-driven services and spaces for an improved student experience
- Technology-enabled learning & teaching (including active learning, interactive teaching, flexible study).

IV. AUTHORITY:

The Vice-Chancellor & Registrar of JSS AHER hold delegated authority and are responsible for all aspects of the Institute's "SMART CAMPUS POLICY".

The Smart Campus Policy of JSS AHER follows:

- The Swachh Bharat Mission (Urban) guidelines, Government of India.
- National conservation strategy and policy statement on environment and development, Government of India.
- National Cyber Security Policy, Ministry of Communication and Information Technology, Government of India.

3. DEMOGRAPHICAL VIEW OF MEDICAL INSTITUTIONS

4. KEY ELEMENTS AND SUB ELEMENTS OF A SMART CAMPUS

1. **Smart Buildings & Infrastructure**
   - Accessibility
   - Safety and Security
   - Energy efficient
   - Rain Water Harvesting (RWH)
   - Walkable campus
   - Bicycle
   - Sustainable Transport
   - Road network
   - Signage
2. **Smart Education, Learning & Digitization**
   - Smart Classroom
   - E-Resources
   - Wi-Fi Connectivity
   - ICT Enabled services
   - Modular Laboratories
   - Innovation Centre
   - Virtual Class and Laboratories
   - Outreach Programmes
3. **Smart Sports & Recreation**
   - Playgrounds
   - Sport facilities-Indoor and Outdoor
   - Recreational space
   - Open Gym
   - Yoga facilities
   - Amusement park
   - Open air theatre
   - Swimming pool
4. **Smart Safety & Security**
   - CCTV surveillance
   - Fire alarms
   - Fire fighting
   - Peripheral safety
   - Visitor management system
   - Biometric system
   - Anti-ragging
   - Women safety
   - Student counselling system

5. **Smart Waste, Water & Air Management**
   Sanitation and cleanliness
   STP
   Solid waste management
   Plastic waste management
   E-waste management
   Automatic sensor taps
   Air monitoring system
6. **Smart Utilities**
   Solar Projects
   Smart lighting System
   Emergency power backup
   Smart micro grids
   Bio-gas plant
   Kiosks
7. **Smart Services & Connectivity**
   Online services
   Amenities- Bank, Food court, Stationery, pharmacy
   Wi-Fi Services
   LAN
8. **Smart Green Environment Resilience**
   Green Campus
   Landscaping
   Preserving open space
   Soil erosion control
   Ground water recharging
9. **Smart Governance**
   ERP
   Less paper Office
   Training and Development
   ART- Accountability, Responsibility, Transparency
10. **Smart Food & Health**
    Wellness Centre
    Health Centre
    Potable water facility
    Personal Hygiene

ACTION TAKEN REPORT

4.1. **Smart Buildings & Infrastructure**

Buildings & Infrastructure are the main criteria of functionability. The JSS Medical Institutions comprise JSS Medical College, JSS Dental College, Faculty of Life Sciences (Heritage Building), Hostels and Playgrounds.

To realize the vision of providing education for transformation of individual and society, each faculty has been provided to have their own separate self contained buildings to meet the academic, administrative, research, training and extension activities associated with teaching learning process. The infrastructure is provided to meet the modern requirements by retaining the conventional methods wherever required to accommodate the following requirement:

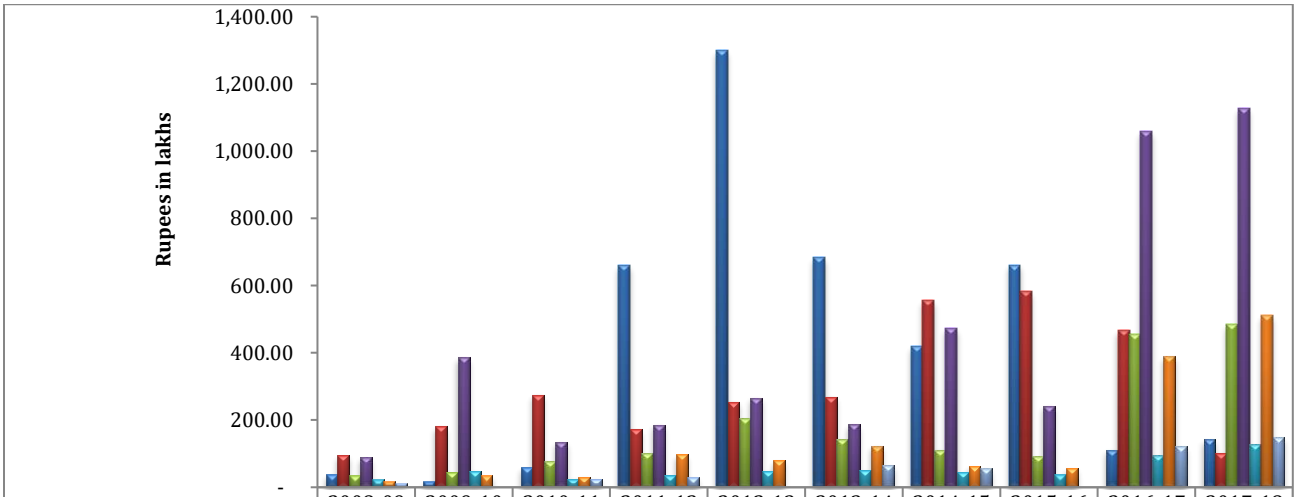
- ✓ To have national and international strategic tie – ups and to collaborate with reputed universities, industries and research organizations.
- ✓ To build global network through alumni and to have multidimensional partnerships with faculty and institutions around the world to foster flow of ideas.
- ✓ To establish centers of excellence.
- ✓ To ensure the quality education system nationally & internationally and necessary certification recognition are obtained.
- ✓ To attract the best researchers and research students by providing comprehensive support and motivation.
- ✓ To drive inter – disciplinary approach as desired by the global world.
- ✓ To work in partnership with policy makers and practitioners worldwide, to bring improvement in real time to people's lives.

JSS AHER is a multi campus institution located with its campuses at Mysuru and Ooty. The campuses have a total extent of land area of 57.24 acres and house the four constituent colleges and two university departments. The campus is endowed with the state of the art buildings comprising of the physical infrastructural facilities that support and facilitate teaching – learning process.

Following are the details of land of JSSAHE&R Campuses and the expenditure incurred towards providing infrastructure to create an excellent ambiance and atmosphere for work.

Sl. No.	JSSU Campuses	Total Area in acres	Total Built up Area	Plinth Area / in %	Infrastructure Provided
1	JSSMI Campus, Mysuru	43.60	79861.81 Sqm	15.06%	• Academic Infrastructure • Library & Information Services & ICT • Amenities • Support Services
2	JSSCP Campus, Mysuru	7.19	17,966.82 Sqm	27.90%	
3	JSSCP Campus, Ooty	6.40	37932.76 Sqm	22.96%	
4	NRI Studio Apartments *– Off campus (B+G+3)*	0.275	1747.60 Sqm	33.67%	
5	Staff Quarters – *Off campus (G+2)*	0.275	1982.00 Sqm	56.67%	

Expenditure Incurred towards providing Infrastructure



	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Buildings	37.16	16.94	58.12	659.40	1,300.43	684.55	418.45	661.33	111.13	142.69
R&M / R&U of Building	95.15	181.75	274.51	171.16	253.53	268.85	555.10	582.74	467.53	102.00
Furniture & Fixutres	34.11	44.73	76.91	101.37	205.73	142.97	111.71	92.51	453.78	483.42
Instruments & Equipments	89.38	387.54	135.62	185.60	264.81	187.48	471.80	241.68	1,057.29	1,125.92
Computers & Softwares	22.52	48.30	25.13	35.79	48.54	50.82	45.95	36.73	94.72	126.46
Books & Journals	17.19	34.47	30.82	97.35	79.77	122.54	63.09	57.13	388.16	511.86
Pur. Of Vehicles	12.81	-	25.01	29.46	-	64.74	55.59	-	121.42	149.30

Academic infrastructure

Auditorium

Auditoriums and multipurpose halls are fully equipped with AC, lighting and AV solutions for conducting various functions, meetings and cultural activities as below:

Sl. No.	Name of the Institutions	Seating Capacity
1	JSS Medical College, Mysuru JSS Hospital, Mysuru	600 500
2	JSS Dental College & Hospital, Mysuru	300
3	JSS College of Pharmacy, Mysuru	500
4	JSS College of Pharmacy, Ooty	500




Gallery / Seminar halls

Sl. No.	Name of the Institution	Details	Seating Capacity	Number
1	**JSS Medical College, Mysuru**	Lecture Hall (Gallery Type)	275 x 1 250 x 4 200 x 2	07
2	**JSS Hospital**	Lecture Hall	250 x 1 150 x 1	02
		Seminar Room	60 x 100	14
3	**JSS Dental College & Hospital, Mysuru**	Lecture Hall	100 x 4 60 x 2	06
		Seminar Hall	50 x 9	09
4	**Dept., of Water & Health**	Lecture Hall	40 x 3 20 x 4 15 x 6	13
		Seminar Room	100 x 1	01
5	**Dept., of HSMS**	Lecture Hall	40 x 2	02
		Seminar Room	40 x 1	01

PG guest hostel

JSS AHER has newly constructed the PG Guest Hostel at the North East Corner of JSSMI Campus comprising B+G+2 floors.

Guest House






Sub Elements of Smart Buildings & Infrastructure

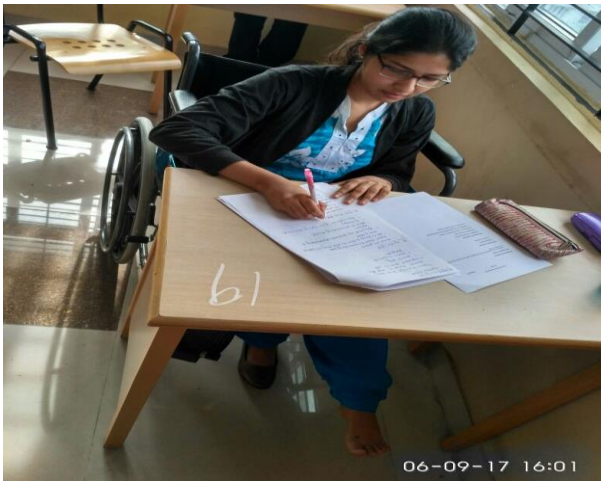
Accessibility

JSS Medical College campus is situated on the Mysore – Bangalore Highway and it is well accessed by all the stakeholders. College has bus facilities for students and it is also well connected through local bus routes.

Disabled access facilities provided for physically challenged

For the physically challenged personal the following facilities are made available in the college campus.

- ✓ Wheel Chairs
- ✓ Stretchers
- ✓ Ramps provided in all the floors of the college and hostel
- ✓ Suitable toilets provided in college and hostels
- ✓ Lift facilities available



Accessibility for disabled or students who require additional support during examinations

Hostel Facilities

Wash room – physically challenged access

All the institutions of JSSAHE&R have provided the Physically Challenged Friendly Washrooms for the convenience of them.

Safety and Security

All the buildings are safe and do not pose any threat to students, employees and other stakeholders due to wide spaced rooms and corridors. Fire alarms and fire extinguishers are in place. Laboratories are equipped with first aid accessories.

Energy efficient

Most of the buildings are equipped with enough natural lighting, avoiding the use of artificial lighting during majority of the time. Wherever lighting is required, all the energy consuming bulbs have been converted to LED lamps which conserve energy. There is enough ventilation allowing natural air passing through the buildings, thereby reducing the use of air conditioners.

Name of the Institution	Power generation (SRTP)	Date of Solar plant charging (of panels) / generation	Details of Feeders used for Solar power generation		Impact of the initiative
			No. of feeders	Capacity	
JSSDCH	172 kw	19th May 2019	04	50kw*2no's 36kw*2no's	Total Power dependency on KEB is reduced by 50% in JSS Medical Institution campus of JSS AHER @ Mysuru
JSSMC	200 kw	3rd June 2019	04	50kw*4no's	
JSSCPM	100 kw	19th July 2019	02	50kw*2no's	Total Power dependency on KEB is reduced by 70% in JSS College of Pharmacy campus of JSS AHER @ Mysuru

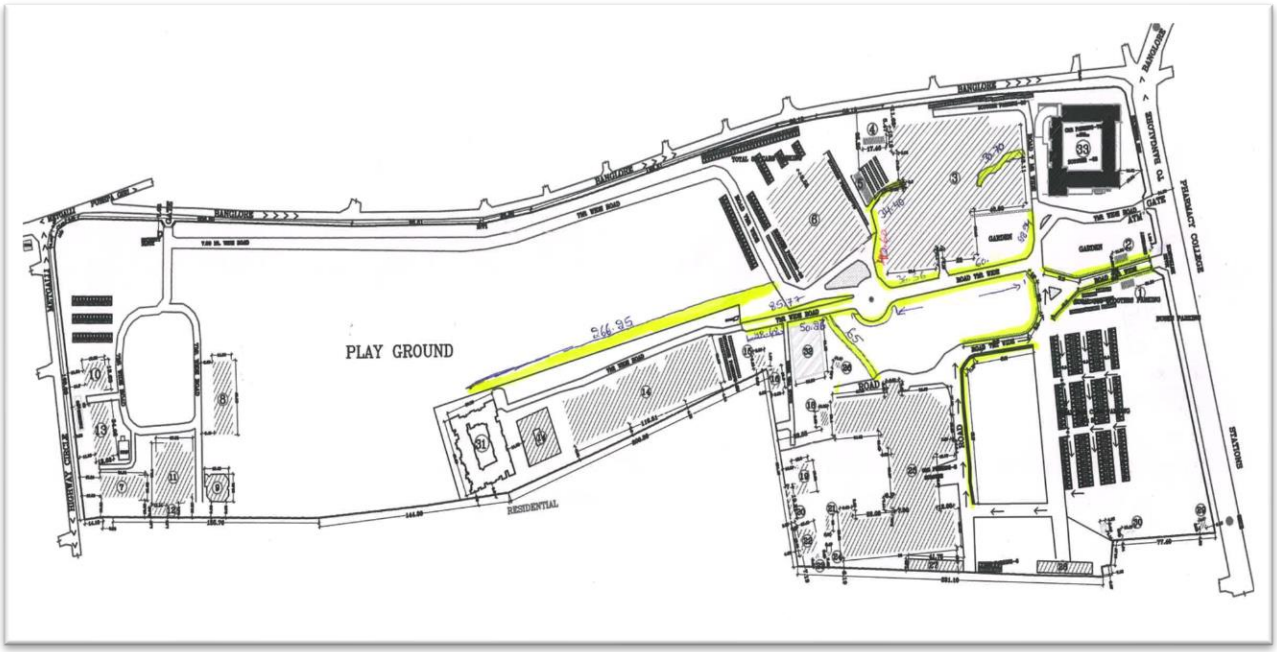
Rain Water Harvesting (RWH)

There are a couple of pits available within the campus which is connected by water pavements which collect rain water.

Walkable campus

The Medical College campus is well accessed by walking between the different constituent colleges. Almost 1 km of walking pavements have been arranged making the accessibility better.

Walking pavements within the campus



Bicycle

JSS AHER has introduced bicycles for the convenience of students and faculty at different points which has considerable reduced the usage of motor vehicles. This initiative goes in line with creating a green campus, reducing the carbon output.

Bicycle stand constructed within the campus

Sustainable Transport

JSS AHER has provided a well connected transportation to large number of students. Bus facility is provided for easy transit between the different units of the Institute for students, teachers and other employees. The college buses are regularly checked for their efficiencies, such that no extra fuel is utilized. The institute provides regularly maintained vehicles for commutation and the concept of car pooling and use of bicycles within the campus have been initiated.

Type of Vehicle	Total
Buses	11
Mobile Van / Ambulance	02
Bolero / Jeeps	08
Cars	03
Two Wheeler	01

Road network & Signage

The entire campus is well connected with roads and there are proper signage displayed wherever necessary.

4.2. SMART EDUCATION, LEARNING & DIGITIZATION

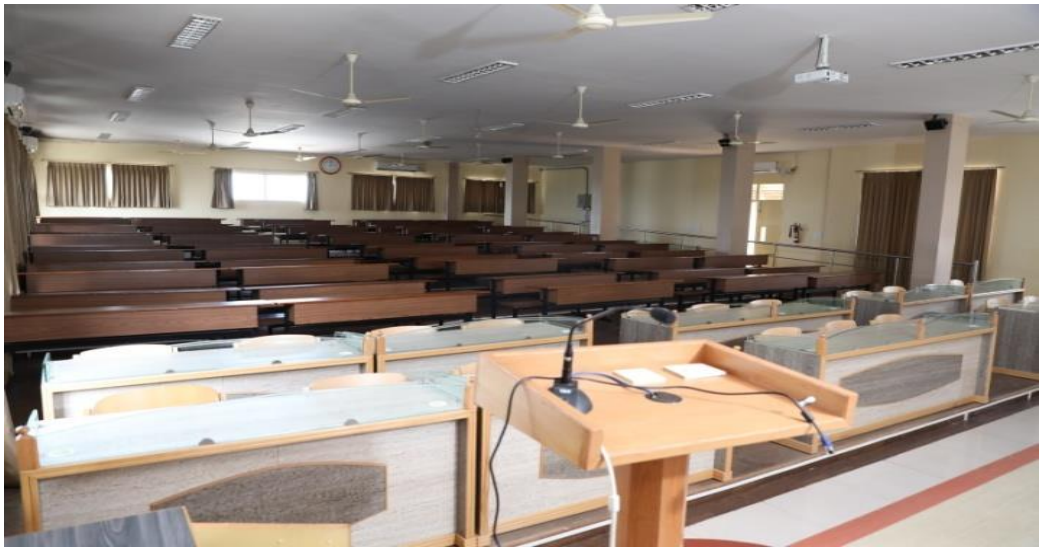
Digitization of teaching and study materials is under process. Accessibility to study materials by students is rendered through Wi-Fi connectivity in the entire campus. Most of the rooms are IT enabled in order to enhance learning through powerpoints and videos.
Spacious and well furnished libraries cater the needs of students in learning.

Existing Facilities

- Smart class room – 2 no's (MC & DCH)
- Simulation lab (Pharmacology and Physiology)
- Digital Library – 4 no's (MC - 40 no's. DCH – 15 no's. HSMS – 5 no's. FLS – 28 no's)
- Outreach programme facility (ISRO open Learning)
- IT enabled classroom (with projectors)
- Upto 1 GBPS uninterrupted internet services through NKN connectivity for a period of 10 years is availed *(presently, 300 mbps)*
- All the buildings are connected with OFC cable.
- Wifi connectivity is enabled *(within the building)*
- MS Windows license version computers
- JSSU online services *(for all official communication)*

Smart Classroom

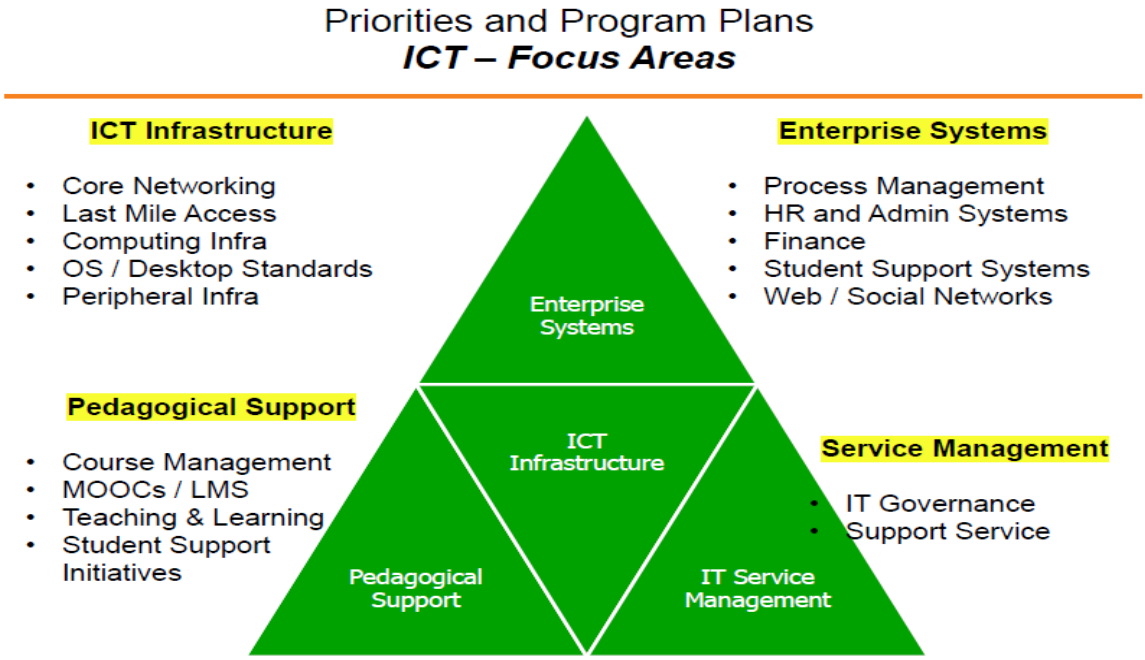
Smart classrooms are provided to extract the potential of best online resources in teaching and learning process and to go extra mile to grasp information other than the curricula, online resources can improve the curiosity and creativity among the students.



JSS AHER has provided smart class rooms with facilities up to date for benefit of the students.

ICT Enabled services, Wi-Fi Connectivity & E-Resources

The entire campus if Wi-Fi enabled and students can access to learning materials wherever they are. All the study materials have been available through the JSS AHER online portal so that students can access through their login credentials and the same has been demonstrated during the most difficult times. Further, the institute is well equipped with digital library which hosts several thousands of books and journals readily accessible for students and teachers.



Digital Journal of Clinical Medicine

In the era of Digital Technology and online learning, the concept of "Digital Journal of Clinical Medicine" is being introduced in order to help medical students learn in a better and more holistic manner. With smart phones and online learning gaining a significant role in every student's life, it would only make sense to incorporate something that would be educative for them in a short span of time.

SWAYAM portal and MOOCs

Swayam is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

Online Teaching

JSS AHER has stepped up to take its teaching online during the most difficult times making use of the ICT enabled services, Wi-Fi connectivity and E-Resources. The services provided were aptly rewarded.

Modular Laboratories

Innovation Centre

JSS AHER provides opportunities to incubate innovative ideas from both students and faculty. The innovation/incubation centre is called SPARKLE CINE. SPARKLE signifies Science Promotion through Advancement of Research & Knowledge for Life through Entrepreneurship, & CINE stands for Centre for INnovation & Entrepreneurship.

Sparkle CINE is a Section 8 company established under the aegis of JSS Academy of Higher Education & Research for the purpose of promoting translation of educational excellence to ideas and to catalyse the power of the idea towards innovation and entrepreneurship focused on advancement of Science.

Virtual Class and Laboratories

In view of providing experimental training for the students in the Physiology and Pharmacology Depts of University, the students, researchers and faculty are given the facility of training **through simulation technology** via Elsevier Animal Simulation Software across the University. This is an attempt to comply with the CPCSEA guidelines.

Outreach Programmes

The Motto of NSS "NOT ME BUT YOU" reflects the essence of democratic living and upholds the need for self-less service. NSS helps the students develop appreciation to other person`s point of view and also show consideration to other living beings. JSS AHER started NSS activities at its constituent colleges with important objectives of identify the needs & problems of the community & involve them in problem-solving and to develop among themselves a sense of social and civic responsibility. It helps the students to acquire leadership qualities and democratic attitudes, to develop capacity to meet emergencies and natural disasters and practice NATIONAL INTEGRATION and SOCIAL HARMONY. We have 5 NSS Units spread across the constituent college with a strength of 450 NSS volunteers and 5 NSS Program Officers.

JSSAHER'S Social Responsibility is an approach of ethical and intelligent management, which involves both its impact on its human, social and natural context, and its active role on the promotion of Sustainable Human Development of the country. Within this approach, "Sustainable Campus" is a strategy that strives to reduce the ecological footprint of the Institution via a rational use of resources and to educate the JSSAHER community on the ethics of sustainability.

4.3. **SMART SPORTS & RECREATION**

Health and well-being are an important aspect of academic success and retention; when a student is healthy in mind and body, they are better able to focus on and complete their studies. By taking measures to improve a student's health and well-being, an institution is actually helping its self by potentially increasing the student's GPA and graduation, and retention rates.

The goal is to have the campus community flourish and be fulfilled individually and within our communities where we live, learn, work, and play. As one of the vital stakeholders in Health & Well-Being, the Sports and Campus Recreation Complex should fulfill this vision by providing space and opportunities for students to discover and affirm their own well-being practices in five different dimensions (emotional, physical, social, professional and spiritual) that lead to a healthy lifestyle.

Playgrounds

Sport facilities-Indoor and Outdoor

Open Gym

Yoga facilities

Amusement park – Yet to create
Open air theatre – Yet to create
Swimming pool – Yet to build

4.4. **SMART SAFETY & SECURITY**

CCTV surveillance

The entire campus is under CCTV surveillance to ensure the safety of students around the clock. Majority of the laboratories are also equipped with cameras to attend to any accidents. Hostels are also continuously monitored through the cameras.

Fire alarms & Fire fighting

Peripheral safety

Round the clock security guards (Male & Female for respective hostels) as well as CCTV cameras are placed for continuous monitoring and vigilance for the safety of students.

Safety parameters

- High raised buildings are equipped with fire/smoke sensors.
- Regular workshops on safety management are being conducted for both faculty and students to help them handle emergency situations.
- Interaction with Laboratory managers and electricians should be facilitated for the safety of the campus. Their contacts should be displayed and readily available in case of emergency.

Visitor management system

Visitors are monitored and entertained only after getting prior consent from the concerned Department. Security offices are advised to keep a record of visitors who enter the premises.

Biometric system

Biometric system is already in practice for all the teaching and non-teaching faculty of the institution.

Anti-ragging & Women safety

Committee comprising of faculty against ragging and sexual harassment is highly functional and therefore such circumstances are completely avoided in the campus.
Hostel premises are equipped with about 120+ CCTV cameras and continuous surveillance under security personnel.

Student counselling system

An efficient committee for student counseling system has been constituted to further address issues of students both academically and personally. The system is integrating students, teachers and parents.
Hostel premises are equipped with cameras and continuous surveillance under security personnel. A regular check of food for nutrition and hygiene is carried out in order to provide safe health.

4.5. **SMART WASTE, WATER & AIR MANAGEMENT**

Sanitation and cleanliness

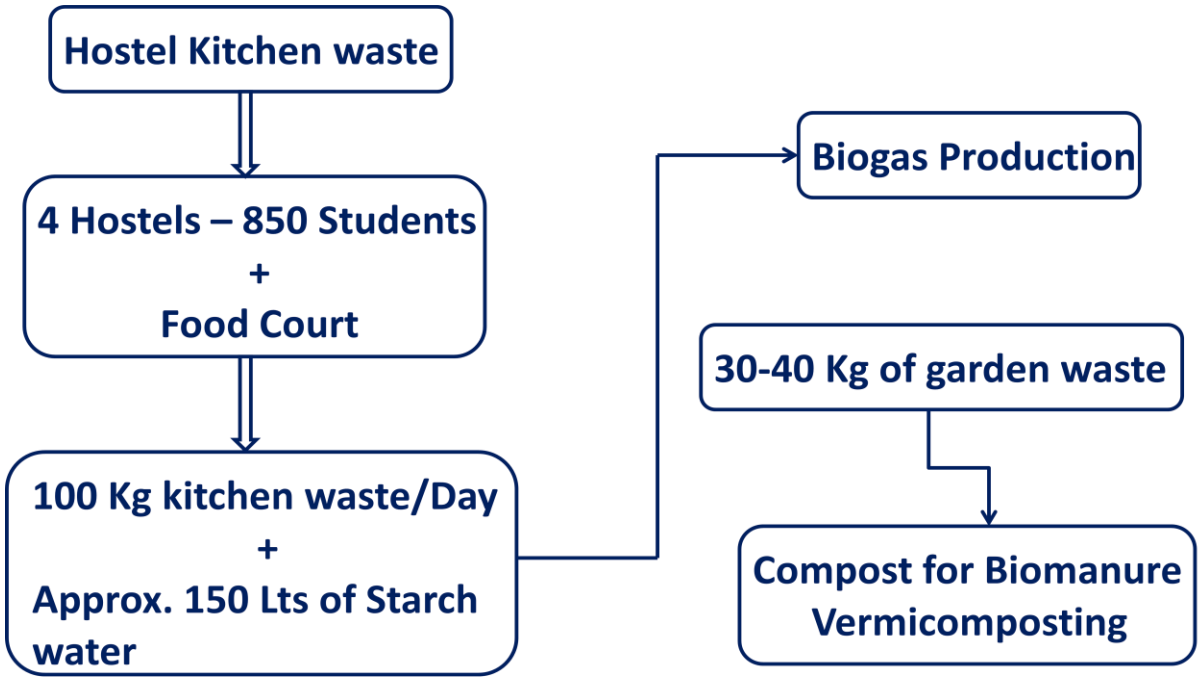
Waste materials being cleared by the municipality

Colour coded bins for segregation of waste

Solid waste management

- Bio – medical waste management service is being availed since May 2003 (Dental & Medical) from M/s. Shree Consultants.
- Bio – medical waste management service is being availed (JSSCPM) from M/s. Gips
- Segregation and collection of dry and wet garbage is in practice.
- Color coded dustbins are provided across the campus.

Bio/food waste



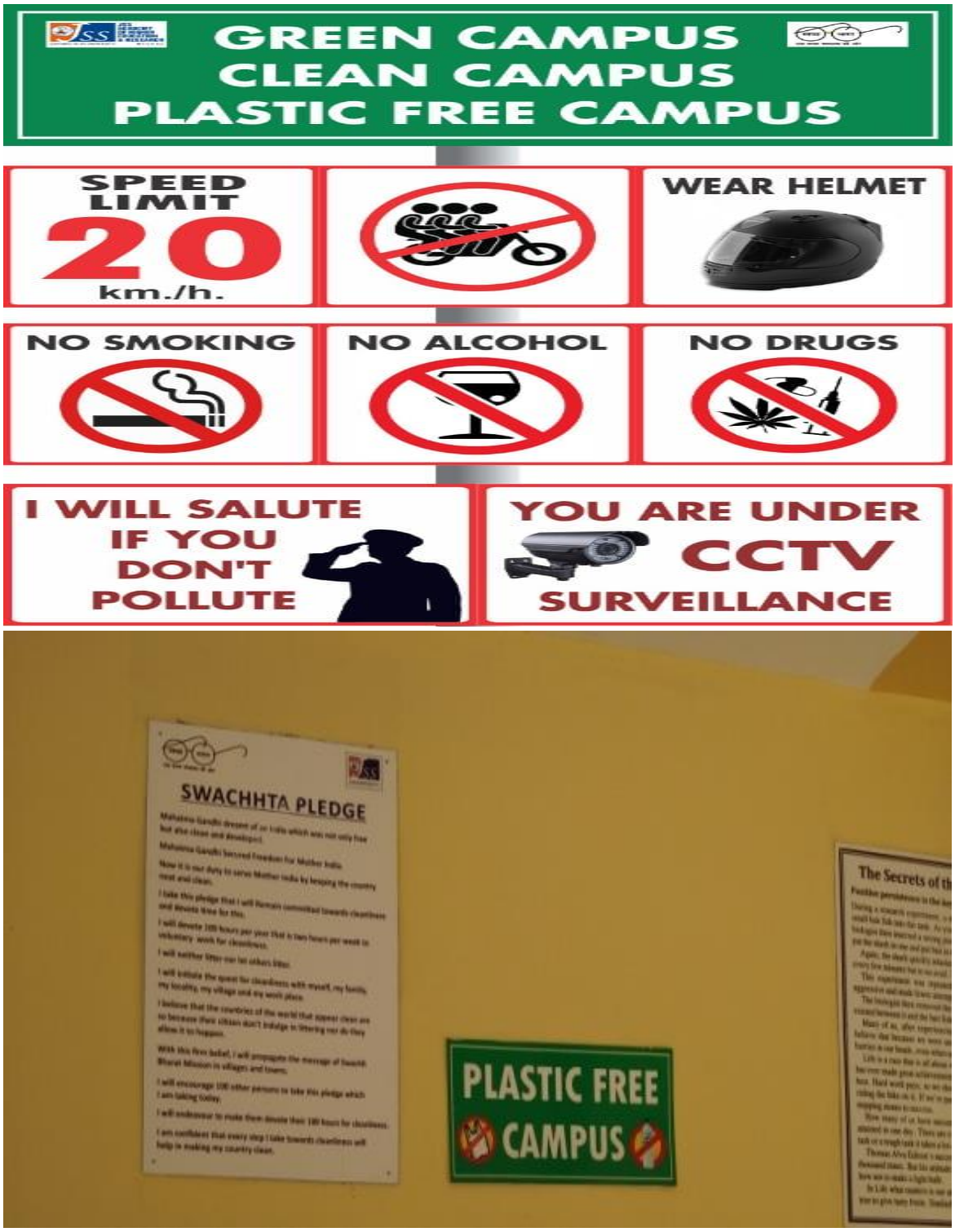
Vermicomposting

Vermicomposting is the use of earthworms and microorganisms to accelerate the composting process. Worms, through digestion, liberate plant nutrients from organic material converting it to rich humus. Worms consume up to their own weight daily, excreting castings which contain from five to eleven times the amount of plant available nutrients in the material consumed. Worms have been recognized to play a very important role in the enhancement and maintenance of soil penetrability, redistribution of nutrients, water flow and gas exchange. The pedogenic value of worms, in addition to the release of nutrients, has vast applications in agriculture and soil reclamation. The vigorous ability of worms to convert organic residue into a nutrient rich growth medium also has applications in waste management.

Need for a Vermicompost unit within the campus

Our Institute maintains a very good green carpet area making the campus a green environment. With a number of trees within the campus, accumulation of fallen leaves and other plant materials account to around 50 – 100 Kg of bio-waste which is being dumped and finally removed by external agencies. With the smart campus initiative gearing up, it is worthwhile to consider our own strategies to handle the waste generated within the campus. In this connection the vermicompost unit would come handy to handle the plant waste materials which not only will help us manage waste but also serves as a student centered project to produce bio-manure.

Plastic waste management



The Institute has pledged to reduce the use of plastics throughout the premises. Constantly the students and faculty are being advised not to use plastics wherever possible. JSS AHER is continuously supporting the Swachh Survekashan, an initiative by the city Municipal Corporation.

E-waste management

Certificate No.	MERL/1819/0015 Date: 2-MAY-2018
Date of Material Receipt	12-APRIL-2018
Weight	610kgs
Customer Reference No.	MOU Dated 3-AUG-2017

eRecyclebin

CERTIFICATE OF E-WASTE RECYCLING

This is to Certify that e-waste received for recycling from

JSS Academy of Higher Education & Research, MYSURU-15

has been safely disposed at our registered facility in an environment friendly manner.

MAHALAXMI E RECYCLERS PVT LTD KOLHAPUR

For Mahalaxami *e* Recyclers

Authorized Signatory

MPCB Reg. No. : MPCB/RO(HQ)/REG/14/E-Waste/HWMD-182 | Date : 31st July 2014

Renewed Reg. No. : MPCB/RO(HQ)/REG-15/EWASTE/HWMD-257/Dt. 9th Oct. 2015 Valid till 8th Oct. 2020

Mahalaxmi e-Recyclers Pvt. Ltd. Plot no: J-5 (Part), Gokul Shirgoan MIDC, Tal : Karveer, Dist : Kolhapur | Website : erecyclebin.com

Waste water management

Hostels, for instance are the main source of sewage water, while waste water from canteens, restaurants and campus buildings add up to the sewage. An effective sewage water treatment in a biological aspect can replace conventional chemical water treatment, as a need for sustainable green management is vital for a smart campus.
Student Projects/Pilot Projects are a main source of ideas that can be implemented after successful completion of the projects.

Sewage treatment plant

Existing small scale sewage treatment plant in the guest house

Usually a sewage treatment plant (STP) is considered as a liability and is only planned to comply mandatory regulations. But same can be made an asset that produces revenue at the same time addresses the mandatory environmental compliances.
An STP can be considered to be an industry where the raw material (sewage and food waste) is of reliable supply and available at no cost. The treated water which is the product of this unit can substitute fresh water required for gardening and thus reducing the current water bills and finally the biogas which can substitute/supplement LPG in the kitchens and reduce LPG bills. Below is brief overlook of a model:

- Raw material is reliable
- Raw material is free
- Treated water (end product) has demand
- By-product (biogas) out of treatment has a demand
- Sludge produced can be used as a valuable source of fertilizer for the landscape irrigation

The specific salient features of the ARBiT™ STP are listed below:

1. ARBiT™ STP can be commissioned and operated even with low occupancy of the college unlike other technologies that requires at least 40% occupancy in the college project.
2. The ARBiT™ STP will be located between the B & C Blocks of girls hostel.
3. The ARBiT™ water reclamation plant will be located below and above the ground.
4. Wastewater unseen during the treatment process.
5. Zero noise and vibration during operation.
6. Power consumption is very low and approximately 70% lesser than conventional systems

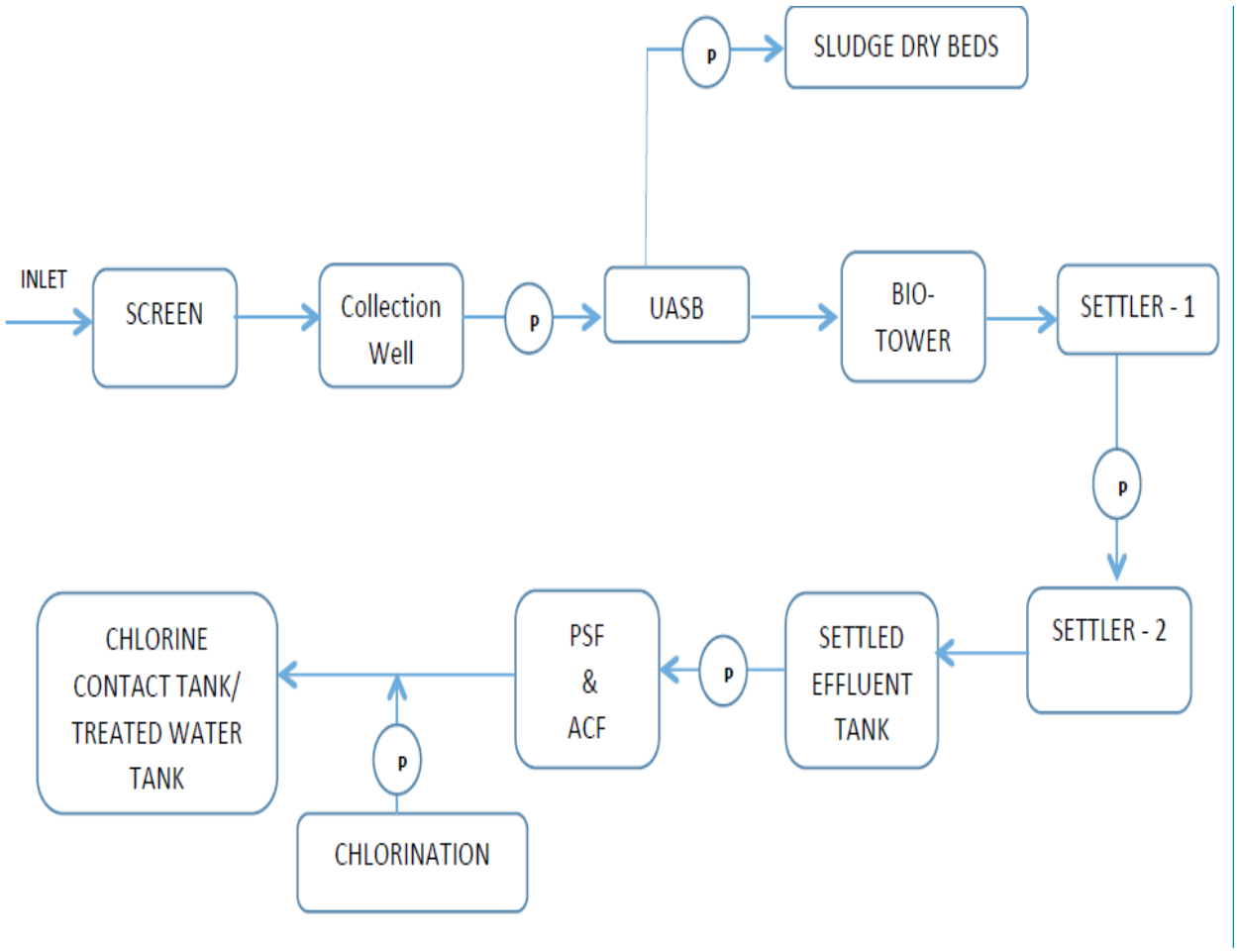
7. The area required for the STP is also approximately 30% lesser than conventional systems. This will also reduce on the civil construction cost effectively reducing the capital required.
8. The odor produced from the STP will be collected, contained and discharged without causing inconvenience to the occupants or neighbors.
9. The quality of the treated water will meet the reuse standards specified by Karnataka State Pollution Control Board.
10. The disinfection of the treated effluent may be done using Hypochlorite.
11. The biogas generated during the treatment process can be used for beneficial purposes if required.
12. Optional treatment for the disposal of the organic solid waste from the canteens can be integrated with this ARBiT™ STP. High volumes of biogas can be generated and may be supplied to the canteens to reduce the LPG consumption or generate electricity.

Proposal of the STP to address the wastewater treatment for the girls hostel

As seen during the site inspection, we propose the location to establish next to the compound wall between the B&C block
The capacity of the plant: 90 KLD (detailed calculations given in the proposal)
Implementing the biogas utilization unit along with the STP is possible since the leftover food from the canteen and the organic wet waste from the kitchen is very nearby and can be converted into biogas. The biogas is produced both from the sewage and left over food and vegetable waste.
The expected production of biogas per day equivalent of LPG is: 30 Kg which works out to Rs 47,400/- per month savings. The treated water can be used for the gardening and toilet flushing with small change in the plumbing. Recycling water will also reduce the fresh water consumption and in turn reduce the water bills.
The project thus meets the sustainability aspects, economical and entire campus become "Green".

ARBiT™ PROCESS

The ARBiT™ process (Anaerobic Reactor with Bio-tower) is a combination of both anaerobic and aerobic treatment of wastewater. The wastewater is first introduced into an anaerobic reaction tank (UASB tank) with a designed retention time. A floating sludge blanket is formed inside the UASB reactor under anaerobic conditions. Anaerobic degradation of organic matter (BOD) is achieved up to 75-80%. The overflow of this reactor is fed into the bio-tower for further removal of BOD under aerobic conditions.



Flowchart of the processes of water reclamation plant

Automatic sensor taps

The institute has fixed touch sensor water taps during the first phase to validate the use of such taps. Following the data of water saved, automatic sensor taps may be installed during the second phase of up gradation.

Air monitoring system – Yet to be initiated

4.6. SMART UTILITIES – WATER, GAS & ELECTRICITY

Water conservation

• Awareness program shall be held in campus once in 3 months for Sensitizing the staff and students

• The students in hostels shall be sensitized about water conservation in their orientation meetings.

• Printed stickers / labels with the slogan 'Save Water' to be fixed in strategic places of the college and hostels.

• Reducing car washing and the vehicles on the campus shall be washed based on the real needs rather than regular washing.

• The gardens shall be irrigated only with sprinklers and drip irrigation systems to save the wastage of water in plantations.

• All the existing flushes in the toilets to be changed into duel flush system in a phased manner.

• Sticker Reminders as part of the 'Energy Awareness Campaign' shall be placed near taps to remind everyone to conserve water by reducing wastage and closing the tap.

Recycle

• Green wastes shall be composted and reused as composts manure.

• All the waste bins to be replaced with duel bins with tag and pictorial signs "biodegradable waste" & non-degradable waste".

• The biowaste disposal shall be only through Government approved disposal service contracts.

Rainwater harvest

To meet the needs and sustainable management of fresh water, the rainwater harvesting and utilization systems have been established in all the campuses of the JSSAHER to aid towards the greater objectives of water management and conservation and increasing recharge of groundwater by capturing and storing rainwater, rainwater harvesting from rooftop run-offs and natural water bodies and the community development. The below-mentioned models are established in the various buildings based on the size of the building and the extent and topography of the land.

The systems include –

• Simple roof water collection systems - Most of the rooftop rainwater harvesting has been completed by constructing five water storage structures with a storage capacity of 1000 m3.

• Land surface catchments – a simple way of collecting rainwater by retaining the flows (including flood flows) of small creeks and streams in small storage reservoirs (on surface or underground) created by low-cost dams.

• Collection of storm water – The surface runoff collected in storm water ponds/reservoirs is subject to a wide variety of contaminants and every effort is made to keep these catchments clean

JSSAHER and the constituent colleges shall continue to establish a combination of the above techniques to have meet the groundwater needs.

JSS Academy of Higher Education & Research (JSSAHER) is conscious of its responsibility and role in materializing its green policy using renewable energy, management of its water resources, and disposal of waste.

Purpose

In order to minimize energy usage, improve the efficiency of all energy/ resources (natural resources, water, electricity) consuming systems and equipment, and improve the environment in all facilities, JSS Academy of Higher Education & Research has adopted an energy / resources conservation and recycling policy.

Definitions

• Energy conservation: Energy conservation is a practice of decreasing the quantity of energy used and achieved through efficient energy use.

• Recycle: Recycle is a process of collecting and reprocessing materials that would typically be considered waste.

Policy

Conservation of energy and natural resources and recycling process is an integral part of JSS Academy of Higher Education & Research (JSSAHER) facilities' design and usage. The JSSAHER employs a variety of energy conservation, recycling, and other techniques to lessen the consumption of resources and achieve the lowest feasible life cycle costs. However, occupant health, safety, comfort, and program requirements shall always be the primary concerns. Energy conservation measures will be achieved by using the most cost-effective, energy-efficient approach with consideration given for flexibility of use and future remodeling convenience. Recycling efforts are encouraged at the Institution/department level.

Responsibilities

• All faculty, staff, students, design consultants, and construction contractors must observe energy and resource conservation measures employed by the campus.

• The Campus Facilities Maintenance & Management Authority- Deputy Registrar shall be the principal coordinator of all design disciplines, which includes responsibility for the implementation of this policy.

• Constituent Colleges & Departments shall be responsible for internal energy conservation, recycling efforts.

Related Policies

The energy conservation and recycling policy of JSS AHER supports

• Smart Campus Policy of JSSAHER

• The Swachh Bharat Mission (Urban) guidelines- Government of India.

• National conservation strategy and policy statement on environment and development-Government of India.

A survey of water utility and storage in the Medical Institutions Campus is given below

BUILDINGS	WATER CAPACITY
Main Over Head Tank	4,50,000 Ltr
Main Over Head Sump	2,00,000 Ltr
Over Head Tank Entrance	50,000 Ltr
Girls Hostel D Block Sump	85,000 Ltr
Girls Hostel D Block OHT	75,000 Ltr
Boys Hostel Sump	40,000 Ltr
MC Over Head Tank	30,000 Ltr
Guest House Sump	87,000 Ltr
Guest House OHT	25,000 Ltr
Canteen Sump	10,000 Ltr
Canteen OHT	10,000 Ltr
Total	10,62,000 Ltr

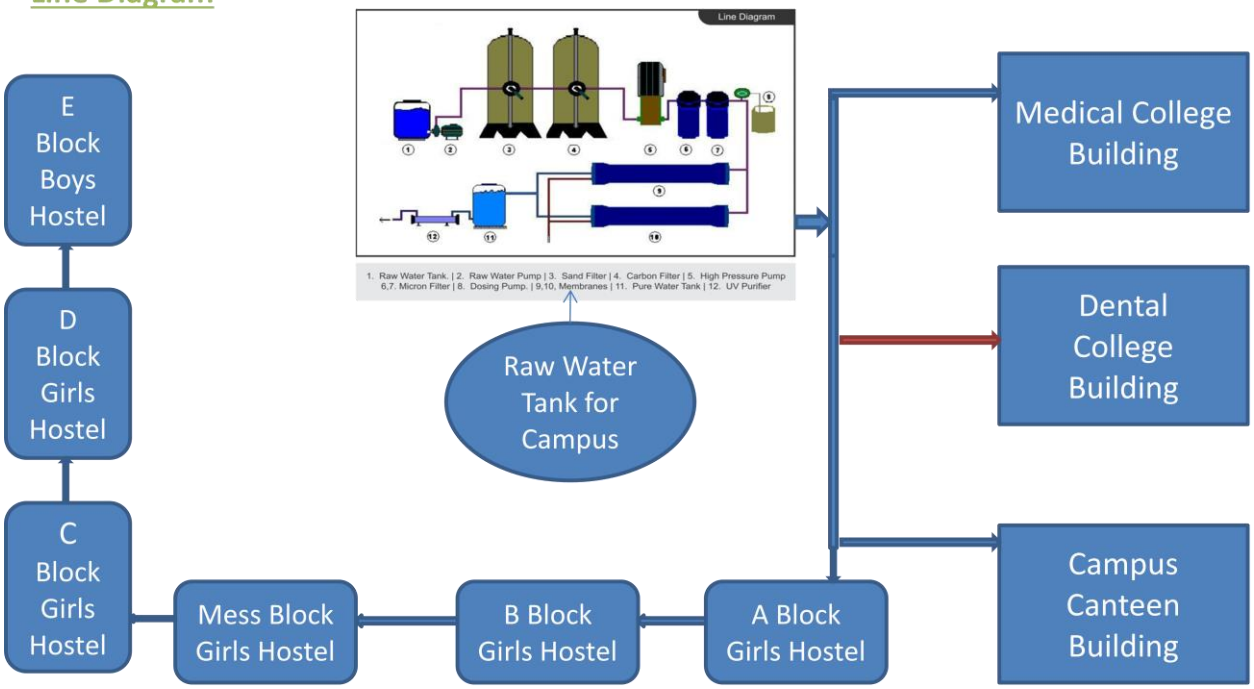
RAIN WATER HARVESTING / RO PLANT / WATER MANAGEMENT

- ✓ Rain water harvesting collection tank of 30,000 ltrs storage capacity.
- ✓ 10 no's of Ground water & bore well recharge pits and infiltration tank of about 15,000 ltrs capacity.
- ✓ STP of 25 KLD capacity by using SWR technology has been installed for treating of sewage & kitchen waste water of PG Guest Hostel & the treated water is using for the purpose gardening area developed surrounding the building.
- ✓ One tank of 10,000 ltrs capacity is made for re-use of RO rejected water for gardening purpose
- ✓ Water sprinklers are in place

RO WATER SUPPLY – CURRENT SCENARIO

An overview of the drinking water facility and the current situation of the RO plant installed in the campus help us to think how we can upgrade the RO plant to fulfill the RO water requirement for the entire campus. The present RO plant installed is not sufficient to fulfill the RO water requirement for the entire campus.

Line Diagram



Inspection Report

1) The entire campus has a one Commercial RO plant of capacity 3000 LPH.
2) Plant needs to be upgraded to fulfill the present requirement of the drinking water.
3) The product output of the plant is having only 40% of permeate water Only
4) The RO water is been distributed in 2 different lines for the entire campus.
   a) Line 1: Dental Block, Campus Canteen Block & Medical Block.
   b) Line 2: Girls Hostel A , B , C , Mess Block , D Block Canteen and Continued to Boys Hostel E Block.
5) The pump which is been used for the distribution of the RO water is a Cast Iron mould pump and impeller gets rusted inside the pump & discharge rust particles which gets mixed in the drinking water.
6) The Pipe line laid to distribute the RO water should be in CPVC. But in Dental Block GI line has been laid which discharges high rust which is getting settled in the drinking water.

7) All the Water which is been treated through RO plant is been Stored in a Syntex tank on the roof top of each and every building without the storage tank Lid and Instead they are using a wooden plank or a black stone slab to cover the same.

8) Since it is Purified water it has to be kept in a closed environment to avoid dust and microbes OR ELSE THERE IS NO POINT IN PURIFING THE WATER.

9) Rest of the Blocks distribution pipe line in Boys and Girls hostel is CPVC can be retained.

10) The Storage water tank of the RO water should be in SS (Stainless Steel)but all the storage tanks which is been installed is Syntex tank.

11) Using Syntax tank for drinking water storage is not suggested, because it reacts when sunlight falls on tank. Since all the tanks are kept in open terrace.

12) All the storage tanks should be sheltered to avoid bio aerosol and dust

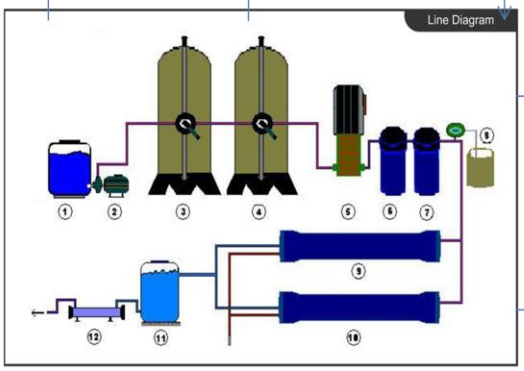
Current status of the RO Water Plant at the MCI

D BLOCK
Floors : 4 Floors
Students : 72
Drinking Water
Usage : 250

Mess Block
Floor : 2 Floors
Number of Students : 750
Floating
(3 Times Food)

A BLOCK
Floors : 4 Floors
Students : 78
Drinking Water
Usage : 250

E BLOCK (RO Plant)
Floors : 4 Floors
Students : 150
Drinking Water
Usage : 450



1. Raw Water Tank. | 2. Raw Water Pump | 3. Sand Filter | 4. Carbon Filter | 5. High Pressure Pump
6,7. Micron Filter | 8. Dosing Pump. | 9,10, Membranes | 11. Pure Water Tank | 12. UV Purifier

B BLOCK
Floors : 4 Floors
Students : 65
Drinking Water
Usage : 200

C BLOCK
Floors : 4 Floors
Students : 54
Drinking Water
Usage : 150

D Block
Floors : 7 Floors
Number of Students : 600
Water Consumption per day 2000 Liters

Proposed upgradation of RO Water Plant at MCI

Schema A:

1) Upgrading the commercial RO Plant in the campus to 6000 LPH to Centralized RO plant and decentralizing the distribution of drinking water to the entire campus with Storage tank in each block with automatic filling.
2) RO Plant room has to be expanded by another 300 Sqft.
3) CPVC Pipe Line has to be laid to the distribution units.

Time Period: To complete the above process setup it would require one month time.

Tentative Budget:

a) RO Plant Only : 15 Lakhs Rupees + 18% GST
b) RO Room Building : 6 Lakhs
c) Pipe Laying including Material Cost: 95 Rupees per feet
d) Storage Tanks, Pressure Boosting Pumps and Fittings can be designed only after exact requirement which will be an additional cost.

Overview of the RO water distribution in the MCI campus hostels

Energy conservation measures

Light Bulb Replacement

• It is estimated that replacing traditional incandescent bulbs with CFLs/LED can cut lighting costs by up to 75%. JSSAHER, Constituent Colleges & Departments shall exchange such traditional incandescent bulbs across campus with CFLs/LED in a phased manner. Thus 75 % of the bulbs shall be changed with CFLs/LEDs by 2017.

• Sticker Reminders as part of their 'Energy Awareness Campaign' shall be placed on switch boards to remind everyone to conserve energy by turning off the lights.

• Small pamphlets emphasizing the importance of energy saving shall be prepared and circulated to all the staff and students of the college.

• Solar water heaters installed in colleges and hostels and especially for cooking, solar energy is utilized in the hostels and in guest houses. Step shall be taken to replace use of LPG completely with solar energy by 2020.

ELECTRICITY – UNDERGROUND CABLE WORKS COMPLETED

Underground Cable works and power backup

POWER / ELECTRICITY (Power back up: 24 x 7)

JSSAHE&R provides has created the facility of providing 24 x 7 power / electric supply either in the form of power connection through CHESCOM / TNEB and in case of failure in power supply, generators are installed in all the campuses for providing uninterrupted electric / power supply.

Campus	RR No.	Contracted Demand in KVA	Motor Constant	Date of Connection / Service	Generator
JSSMI Campus	HT – 166	450 KVA	2500	May 1995	2 dedicated generators of 450 KVA & 500 KVA capacity is provided with auto switch over facility
JSSCPM Campus	HT – 384	150 KVA	750	May 1995	82.5 KVA & 160 KVA
JSSCPO Campus	HT - 107	150 KVA	200	May 1995	100 KVA, 125 KVA & 150 KVA capacity is provided

Solar Projects

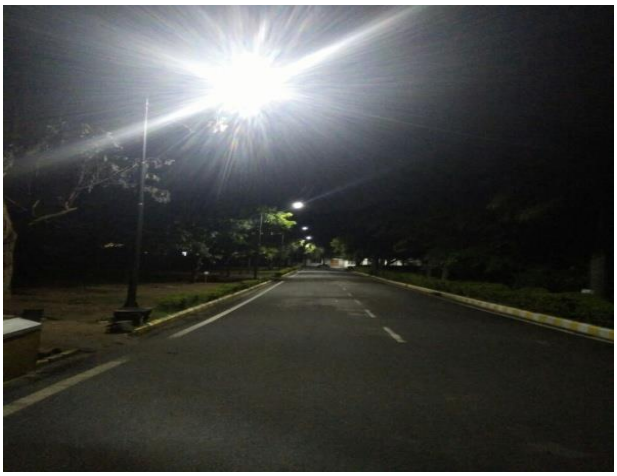
At the Institution level, solar panels have been installed which has considerably brought down the power consumption by at least 50% compared to earlier years. In order to set an example, the institution shares some of the electricity generated by solar energy to the local electricity board. Proper signages have been installed advising the users to always switch off the electricity when not in use.

Most of the lights have been replaced by energy saving bulbs and LEDs to save power. Continuous monitoring and maintenance of Air Conditioning, generators and other power appliances are being carried out to ensure that no power is being wasted under any circumstances.

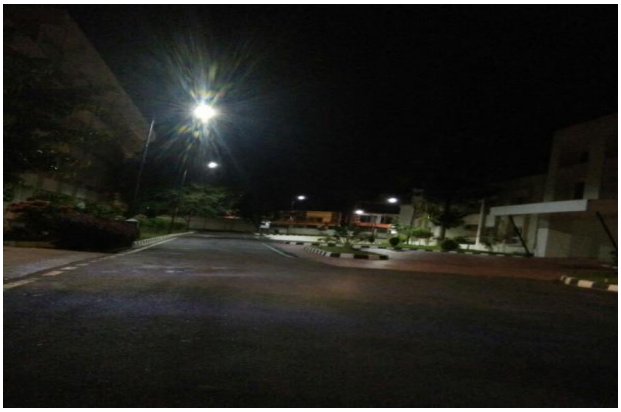
Emergency power backup & smart micro grids

Proper lighting

All the institutions campus of JSSAHE&R at Mysuru and Ooty are provided with LED lightings to promote security in the campus and to increase the quality of life by artificially extending the hours in which it is light and for the safety of hostel students.







Summary of power generation with the aid of solar panels

1	2				3		4		5	6
Month	KEB				Solar Units Generated		Total		KEB Rate	Saving
	A	B	C	D	A	B	A	B		
	Import Units KEB	Export Units from Solar	Actual Consumption of Units (2A-2B)	Amounts	Total Units	Amounts	Units	Amounts (2D+3B)		
Apr-19	144450	0	144450	1314716	0	0	144450	1314716	1314716	0
May-19	153225	0	153225	1419601	11909	73835.8	165134	1493436.8	1535134	41697.2
Jun-19	118150	75	118075	1096122	24708	153189.6	142783	1249311.6	1332678	83366.4
Jul-19	109425	450	108975	1023980	22879	141849.8	131854	1165829.8	1231164	65334.2
Aug-19	101250	1025	100225	944791	35607	220763.4	135832	1165554.4	1267196	101641.6
Sep-19	93125	4325	88800	850504	46215	286533	135015	1137037	1266547	129510
Oct-19	96375	7275	89100	852928	53755	333281	142855	1186209	1337953	151744
Nov-19	89025	10125	78900	764651	60973	378032.6	139873	1142683.6	1310793	168109.4
Dec-19	83575	9025	74550	720964	54812	339834.4	129362	1060798.4	1204710	143911.6
Jan-20	85600	3975	81625	781752	72663	450510.6	154288	1232262.6	1429742	197479.4
Feb-20	81425	17675	63750	628170	69004	427824.8	132754	1055994.8	1235333	179338.2

Mar-20	76300	19800	56500	560793	66086	409733.2	122586	970526.2	1132504	**161977.8**
Total	**1231925**	**73750**	**1158175**	**10958972**	**518611**	**3215388**	**1676786**	**14174360**	**15598470**	**1424110**

4.7. SMART SERVICES & CONNECTIVITY

Available Facilities

- Dental Hospital (366 dental chairs)
- Dental Mobile Van *(1 no. for community services)*
- Bank
- Post Office
- Pharmacy
- Co-operative Society
- Laundry / Cobbler
- Telecommunication
- Incinerators
- Photo copiers and bindings
- Health Insurance services(TATA AIG)
- JSS University NSS Unit
- Free Wi-Fi
- Common communication social platform like a link that connects faculty, students and the institute.
- An in house pharmacy is functioning within the campus to cater the needs of students as well as public.

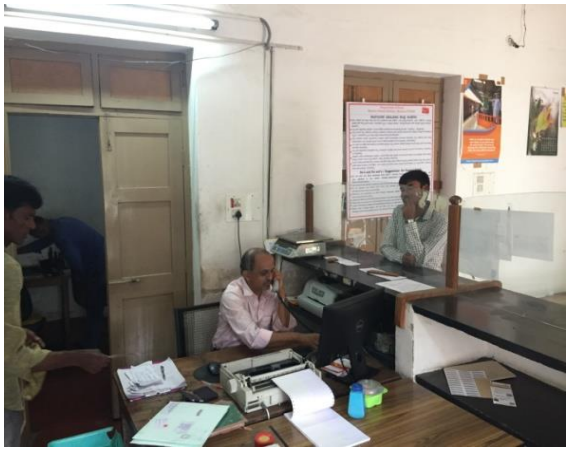
Amenities- Bank, Food court, Stationery, pharmacy

BANK

A branch of State Bank of India at S. S. Nagara, Mysuru shares its banking services with the JSSAHE&R in the JSSMI Campus. The 24 x 7 ATM counter is also attached to the JSSMI Campus Building for easy access to the students.

Post office

Both the Post Office (Sub Branch) and the Telegraph Offices are in the campus for easy access of students and staff.



Co-operative society

The co-operative society is also a part of the institution, which cater to the needs of the students with their essential daily requirements and other requirements such as text books, note books, papers, surgical items, etc. The society works on **'no profit - no loss'** basis.

Food Court

Health centre with pharmacy

4.8. SMART GREEN ENVIRONMENT RESILIENCE

The beauty of nature is a gift of God, and as responsible citizens it is our duty to protect this gift by all means. Hence, following actions are initiated by JSSAHE&R towards Green Initiative:

a) Greenery / Plantation
b) Prohibition on use of Plastic bags and bottles
c) E – scrape
d) Use of Incinerators
e) Solar – Power, Water Heater, Cooking System


GREEN CAMPUS
CLEAN CAMPUS
PLASTIC FREE CAMPUS
SPEED LIMIT
20
km./h.
WEAR HELMET
NO SMOKING
NO ALCOHOL
NO DRUGS
I WILL SALUTE IF YOU DON'T POLLUTE
YOU ARE UNDER CCTV SURVEILLANCE

The Medical Institutions campus maintains a very well developed green carpet throughout the campus.

Recently more arrangements have been made for better parking.

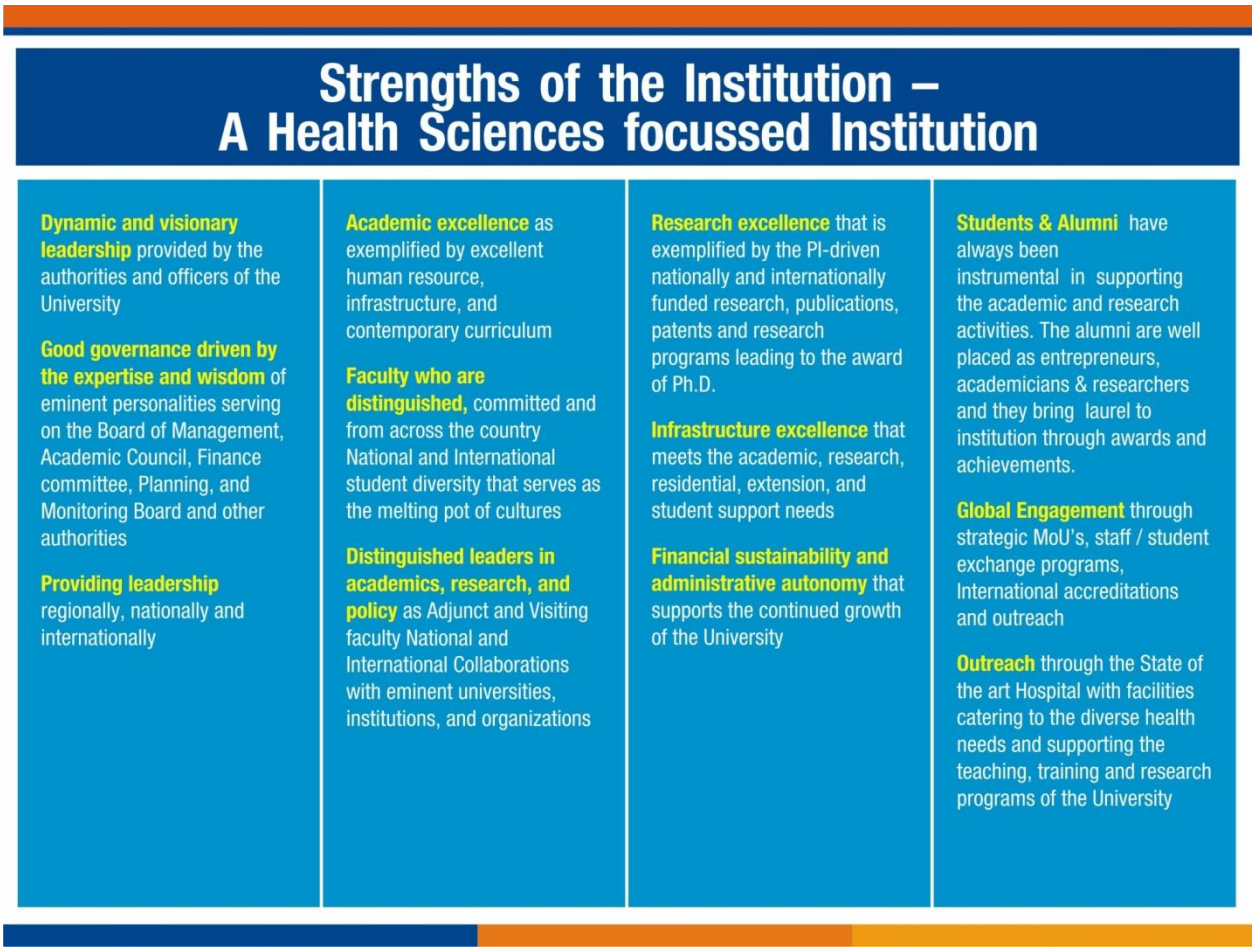
Reduction of carbon foot prints in the atmosphere is a challenging task

A complete tree survey has been completed with the help of eminent botanists and students in the whole of Medical Institutions campus. The survey is vital in order to understand the distribution of plants and their level of carbon uptake.

4.9. SMART GOVERNANCE

Existing Facilities:

- Periodical seminars & conferences,
- Faculty development programme
- Hands on training
- Skill development programs *(computer, Tally, Simulation, Software, Access to data bases)*
- JSSU Online Platform
- Computers / Laptops / Printers / Scanners / Photocopier's / Projectors etc., are provided based on requirement to the administrative & supportive staff and for the Depts., as required.



4.10. **SMART FOOD & HEALTH**

JSS Academy of Higher Education & Research (JSSAHER) is committed to its "JSSAHER Social Responsibility Statement & Vision" to provide sustainable, eco friendly smart campus. The "Food & Supplies Policy" is related to procurement, storage and maintenance of food at (JSSAHER), which is a part of "Smart Campus Policy". This policy provides provisions through which food to be procurement, stored, maintained and delivered to all the constituent colleges and departments of JSSAHER.

JSSAHER and its constituent colleges and departments are responsible in working with suppliers, contractors and partners to minimize environmental effects related to services and supports local suppliers and that all procurements represent value for money. All stakeholders shall assist JSSAHER in meeting the sustainable food & supply policy.

This policy is focused on but not limited to provision and procurement of food at JSSAHER. It applies to all aspects of sustainable food, including procurement, provision preparation, waste management, education, awareness and services.

JSSAHER ensures that:

- Procurement, storage and maintenance of food is reliable, safe and represent value for money.
- Environmental and social responsibility is factored in to all tenders and contracts and encourages small sized businesses.
- Suppliers are committed to sustainable use of transport, packaging, storing etc. Communication on progress made during the contract period.
- Recycling process for quantities and effective waste reduction.
- Usage of biodegradable packaging whenever possible.
- Recycling and reuse where applicable.
- Minimizing wastage while procurement, storage, maintenance and deliver.
- To serve sustainable food and to reduce plate waste.

Roles and responsibilities:

- JSSAHER and its constituent colleges and departments shall procure food in a sustainable manner in accordance with the "JSSAHER Social Responsibility Statement, Smart Campus Policy", which are available from the JSSAHE's website https://jssuni.edu.in.
- The Deputy Registrar has overall responsibility for the implementation and delivery of the policy within The University's catering department. However, different colleges and departments shall have particular responsibility for managing aspects relevant to the department.
- Responsibility for application of the principles and practical delivery of this policy within the college in general lies with the Administrative Officers.
- Responsibility for application of the principles and practical delivery of this policy within catering services lies with the hostel wardens, catering managers and teams.
- JSSAHER shall promote sustainable food to customers to increase awareness and sales through meetings and workshops.
- Any changes to our sustainable food practices will be communicated on an annual basis as a summary report.

• The summary report will be produced by the Campus Maintenance Committee following an annual review by the Registrar and Deputy Registrar.

• Promote and supply seasonal fruit and vegetables to customers.

• Engage suppliers to measure the amount of local and seasonal fruit and vegetables and use to help with procurement decisions.

• Increase the procurement and consumption of organic food, focusing on the health, well-being and environmental benefits.

• Move all disposable products to biodegradable alternatives where possible and reduce the amount of disposables used.

• Ensuring tap water and drinking water is available at every catering outlet

• Eco friendly and effective cleaning materials.

• Send zero food waste to landfill directly and recycle all waste.

• Encouraging sustainable food: Contribute to thriving local economies and sustainable livelihoods. Protect the diversity of both plants and animals and the welfare of farmed and wild species, and avoid damaging natural resources.

• Support a culture of healthy eating

• Provide social benefits, such as good quality food, safe and healthy products, and educational opportunities

• Sustainable procurement is partly about buying and sourcing green products but it's also about ensuring energy and resource efficiency as well as long term cost effectiveness.

• Fair-trade on better prices, decent working conditions and local sustainability.

• Saving costs measured across the whole lifecycle of a product

• Decisions on procurement and accreditation should be made on the basis of a rational assessment of value, ethics and market trends.

The Policy Supports:

• The Swachh Bharat Mission (Urban) guidelines, Government of India.

• National conservation strategy and policy statement on environment and development, Government of India.

• National Cyber Security Policy, Ministry of Communication and Information Technology, Government of India.

JSS Institute hostels are well known for its aesthetic food and hygiene. The Institute follows strict vegetarian food both in hostels and food court. A regular check on food and hygiene is carried out to ensure safe health of the students.

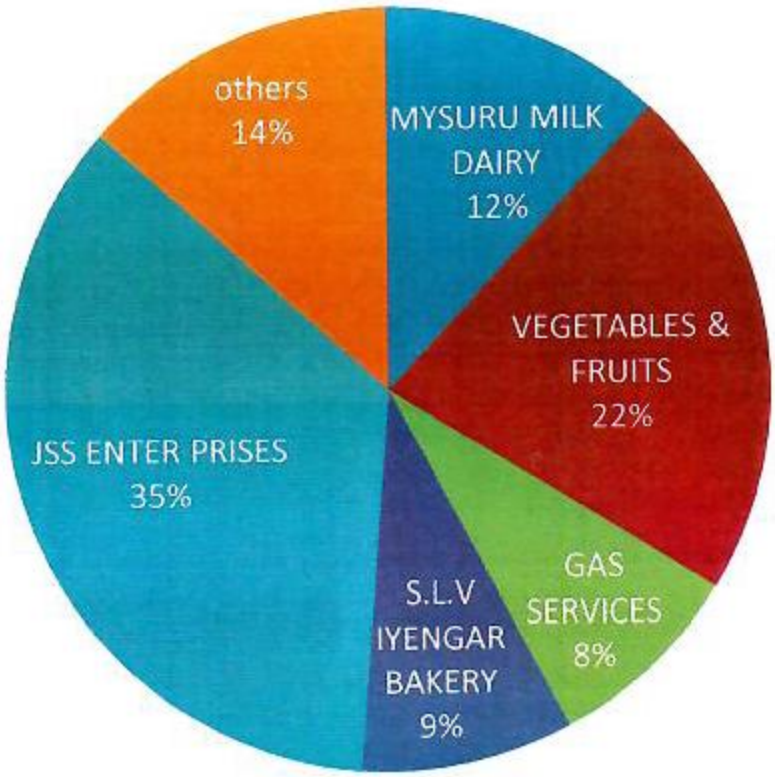
<u>Existing Facilities:</u>

- Food Court *(80 seating capacity)*
- Coffee vending machine
- JSS Health Center
- Mess / Kitchen (3+1 +1 Nos)
- Staff Dining Hall – 2 no's. (JSSU)
- Dining Halls @ Hostels, Guest House, Food Court (5 no's.)

JSS Institutions are already contributing to the reduction of carbon foot print by following strict vegetarian food habits throughout the entire campus.

Further, it is necessary to give orientation to the students regarding the practice of low carbon food and diet.

Hostel officials, care takers and cooks are being trained on the importance of cleanliness and hygiene in the kitchen premises. JSS Institutions ensure that quality food commodities and raw materials are procured from approved vendors and local clean markets.



The pie chart depicts the procurement strategies of JSS AHER

Summary

BUILDING & INFRASTRUCTURE

- Accessibility
- Safety and Security
- Energy efficient
- Rain Water Harvesting
- Walkable campus
- Bicycle
- Sustainable Transport
- Road network

EDUCATION, LEARNING & DIGITIZATION

- Smart Classroom
- E-Resources
- Wi-Fi Connectivity
- ICT Enabled services
- Modular Laboratories
- Innovation Centre
- Virtual Class and Laboratories
- Outreach Programmes

SPORTS & RECREATION

- Playgrounds
- Sport facilities- Indoor and Outdoor
- Recreational space
- Open Gym
- Yoga facilities
- Amusement park
- Open air theatre
- Swimming pool

SAFETY & SECURITY

- CCTV surveillance
- Fire alarms
- Fire fighting
- Peripheral safety
- Visitor management system
- Biometric system
- Anti-ragging

WASTE, WATER & AIR MANAGEMENT

- Sanitation and cleanliness
- STP
- Solid waste management
- Plastic waste management
- E-waste management
- Automatic sensor taps
- Air monitoring system

UTILITIES

- Solar Projects
- Smart lighting System
- Emergency power backup
- Smart micro grids
- Bio-gas plant
- Kiosks

GOVERNANCE

- ERP
- Less paper Office
- Training and Development
- ART- Accountability, Responsibility, Transparency

SERVICES & CONNECTIVITY

- Online services
- Amenities- Bank, Food court, Stationery, pharmacy
- Wi-Fi Services

GREEN ENVIRONMENT RESILIENCE

- Green Campus
- Landscaping
- Preserving open space
- Soil erosion control
- Ground water recharging

FOOD & HEALTH

- Wellness Centre
- Health Centre
- Potable water facility
- Personal Hygiene
- Nutritional Values
- Dietary

Short Term Goal

Most of the elements related to Smart Campus have been achieved. However, it can be claimed thus only after a valid certification that needs to be carried out by an authorized third party.

Godrej Services has been identified as one of such client to carry out the validation process in line with Institutional Green Building Council (IGBC).

IGBC Green Campus Rating System

- It is applicable for buildings which are in design stage as well as operational
- Is applicable for campus with multi-functionality buildings
- Is majorly done for addressing the infrastructure design of the campus
- Influences the individual buildings to opt for green building rating program
- Addresses the complete water, energy and waste management on a holistic approach

IGBC GREEN CAMPUS – CREDIT CATEGORIES

S.No.	Category	Points
1	Site Planning & Management	22
2	Sustainable Transportation	11
3	Water Conservation	18
4	Energy Efficiency	21
5	Material & Resources	03
6	Health & Well being	06
7	Green Education (GE)	03
8	Innovative Practices	06
	Total	90

IGBC GREEN CAMPUS – SITE PLANNING & MANAGEMENT

Credits	Category
SPM MR 1	Green Buildings within the campus
SPM MR 2	Soil Erosion control
SPM Credit 1	Green Buildings within the campus
SPM Credit 2	Site Preservation
SPM Credit 3	Green Cover & Vegetation
SPM Credit 4	Heat Island Reduction, Non-roof
SPM Credit 5	Outdoor Light Pollution Reduction

IGBC GREEN CAMPUS – SUSTAINABLE TRANSPORTATION & WATER CONSERVATION

Credits	Category
Sustainable Transportation	
ST 1	Pedestrian Network
ST 2	Bicycle Lane Network
ST 3	Access to sustainable transport
Water Conservation	
WC MR 1	Rain water harvesting
WC Credit 1	Rain water harvesting
WC Credit 2	Landscape Design
WC Credit 3	Management of irrigation system
WC Credit 4	Waste water treatment & Reuse
WC Credit 5	Optimise water use for construction
WC Credit 6	Water metering

IGBC GREEN CAMPUS – ENERGY EFFICIENCY

Credits	Category
Energy Efficiency	
EE Credit 1	Energy Efficiency in Infrastructural Equipment
EE Credit 2	On-Site Renewable Energy
EE Credit 3	Off-Site Renewable Energy
EE Credit 4	Energy Metering

IGBC GREEN CAMPUS – MATERIALS & RESOURCE MANAGEMENT

Credits	Category
Material & Resource Management	
MRM Credit 1	Segregation of Waste
MRM Credit 2	Organic Waste Management
MRM Credit 3	Handling of Construction Waste
MRM Credit 4	Local Materials

IGBC GREEN CAMPUS – HEALTH & WELL BEING

Credits	Category
Health & Well Being	
HWB MR 1	Tobacco Smoke Control
HWB Credit 1	Basic Amenities
HWB Credit 2	Health & Well Being Facilities
HWB Credit 3	Universal Design
HWB Credit 4	Basic Facilities for Construction

IGBC GREEN CAMPUS – GREEN EDUCATION

Credits	Category
Green Education	
GE Credit 1	**Green Education**
GE Credit 2	**Green Campus Guidelines**

IGBC GREEN CAMPUS – CERTIFICATION LEVELS

Certification Level	New Campus	Existing Campus	Recognition
Certified	**40 - 49**	**36 - 44**	**Best Practices**
Silver	**50 – 59**	**45 - 53**	**Outstanding Performance**
Gold	**60 – 74**	**54 - 66**	**National Excellence**
Platinum	**75 - 100**	**67 - 90**	**Global Leadership**

Budget

Accordingly, financial implications are as below:

1. Feasibility study, Facilitation, Energy modeling and Fundamental & Enhanced commissioning fee is proposed for **Rs. 6,40,000/-.**
2. **IGBC Fee details:**

- Registration fee ---> Rs. 30,000
- Certification fee ---> Rs. 3,68,000
- **TOTAL ---> Rs. 3,98,000**

Thus, the total financial implication would be around Rs. 10,38,000/-

Time Line

Gold certification could be attained in a period of 6 months.

Long Term Goals

Aligning the Key Elements of Smart Campus in line with the Sustainable Development Goals (SDGs) of the UNO

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests. Today, the Division for Sustainable Development Goals (DSDG) in the United Nations Department of Economic and Social Affairs (UNDESA) provides substantive support and capacity-building for the SDGs and their related thematic issues, including water, energy, climate, oceans, urbanization, transport, science and technology, the Global Sustainable Development Report (GSDR), partnerships and Small Island Developing States. DSDG plays a key role in the evaluation of UN system wide implementation of the 2030 Agenda and on advocacy and outreach activities relating to the SDGs. In order to make the 2030 Agenda a reality, broad ownership of the SDGs must translate into a strong commitment by all stakeholders to implement the global goals.


SMART CAMPUS KEY ELEMENTS
BUILDINGS & INFRA-STRUCTURE
EDUCATION, LEARNING & DIGITIZATION
SPORTS & RECREATION
SAFETY & SECURITY
WASTE, WATER & AIR MANAGE-MENT
UTILITIES
SERVICES & CONNECTIVITY
GREEN ENVIRONMENT RESILIENCE
GOVERNANCE
FOOD & HEALTH
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

S. No	SMART CAMPUS KEY ELEMENTS	SUSTAINABLE DEVELOPMENT GOALS (SDGs)
1	BUILDINGS & INFRASTRUCTURE	SDG 9 (Industry, Innovation & Infrastructure), SDG 11 (Sustainable Cities & Communities)
2	EDUCATION, LEARNING & DIGITISATION	SDG 4 (Quality Education), SDG 15 (Life on Land)
3	SPORTS & RECREATION	SDG 3 (Good Health & Well- Being)
4	SAFETY & SECURITY	SDG 16 (Peace, Justice & Strong Institutions)
5	WASTE, WATER, AIR MANAGEMENT	SDG 6 (Clean Water & Sanitation)
6	UTILITIES – WATER, GAS, ELECTRICITY	SDG 7 (Affordable & Clean Energy), SDG 12 (Responsible Consumption & Production)
7	SERVICES, CONNECTIVITY & RETAIL	SDG 12 (Responsible Consumption & Production)
8	GREEN ENVIRONMENT RESILIENCE	SDG 13 (Climate Action), SDG 14 (Life Below Water)
9	GOVERNANCE	SDG 1 (No Poverty), SDG 5 (Gender Equality), SDG 8 (Decent Work & Economic Growth), SDG 10 (Reduced Inequalities), SDG 17 (Partnerships for the Goals)
10	FOOD & HEALTH	SDG 2 (Zero Hunger), SDG 3 (Good Health & Well-Being)

SUSTAINABLE DEVELOPMENT GOAL RANKS OF JSSAHER				
SDG No.	GOAL	2019	2020 (India)	2020 (Global)
	Overall Ranking	101 - 200	3	201 - 300
1	No Poverty	-	2	60
2	Zero Hunger	-	2	101 - 200
3	Good Health and Well Being	46	1	20
4	Quality Education	201 - 300	13	401 - 600
5	Gender Equality	201+	2	101 - 200
6	Clean Water & Sanitation	-	12	101 - 200
7	Affordable & Clean Energy	-	7	101 - 200
8	Decent Work and Economic Growth	-	6	400+
9	Industry, Innovation and Infrastructure	201 - 300	12	400+
10	Reduced Inequalities	101 - 200	7	301 - 400
11	Sustainable Cities and Communities	101 - 200	5	301 - 400
12	Responsible Consumption & Production	16	6	201 - 300
13	Climate Action	-	2	101 - 200
14	Life Below Water	-	-	-
15	Life on Land	-	3	73
16	Peace, Justice and Strong Institutions	91	8	400+
17	Partnership for the Goals	201 - 300	5	201 - 300

Roadmap for attaining the Sustainable Development Goals through Smart Campus initiatives

1. Awareness
2. Advocacy at institution level
3. Implementation at institution level and association with local bodies
4. Monitoring
5. Where do we go from here?

The above listed strategies have already been suggested by Global Taskforce for Regional and local Governments to support and attain the 2030 agenda.