



Estd : 1968

# A.V. COLLEGE OF ARTS, SCIENCE & COMMERCE

(Affiliated to Osmania University)

Gaganmahal, Hyderabad-500029, Telangana

Phone: 040 – 27637751, [www.avcollege.in](http://www.avcollege.in)

Accredited with 'B++' Grade by NAAC (3<sup>rd</sup> Cycle)

Vision: Empowerment Through Pursuit of Excellence

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A.V. College believes in working towards achieving sustainability. In this endeavour, we seek to showcase our dedication to building a greener and more equitable world. Also to be tune with the Govt of India's Atmanirbhar Bharat vision, the college is focusing on the 5 Sustainable it has chosen from the 17 SDGs laid by the United Nations. We encourage our Students to understand this concept and be part of the Government's initiative to save earth for future generations.

This distinctive feature of our college reflects in every program & activity we plan. Goal 11 of the 17 SDGs laid by the United Nations , is '*Sustainable Cities & Communities*'. The concept of a self-sustaining community is one that is inevitable as developing nations work towards achieving the United Nations Sustainable Development Goals. Community Based Organizations as well as Self Help Groups play a major role in improving the livelihoods and providing security of the people thus empowering them.

We at A.V College are constantly engaged in providing our students an affable environment to flourish as entrepreneurs and innovators and to up-skill them into productive work. Self Help groups at the institution level helps students through experiential learning, community engagement, mentoring and facilitation for institutional social responsibility, vocational education, skilling for employability, sustainable development, rural and social entrepreneurship.

To give an impetus to their innovative & entrepreneurship skills we have developed self help groups in our institution which gives student groups the necessary training required in the specific skills. These groups under the guidance of faculty are trained in a specific skill and given a platform to showcase their skills either through a project or through sales counters.

To inculcate a culture of healthy living we choose SDG 3- Good Health & Wellbeing-one of the 5 SDG's we have adopted.

Our College has opened **SAHAJA**, a sales counter with a hope that our students, staff & our immediate neighbourhood & community benefit and join us in making our country &

earth self-sustainable and give our future generations a chemical & pollution free life free . Products that are marketed here are made through natural processes and are chemical free.

As part of this initiative we focus on promoting entrepreneurial skills among students and staff. Institution organises programs like Ideathon and other activities to invite innovative and start-up ideas from the students. Students are encouraged to come up with new entrepreneurial skills.

Empowerment is defined as the process by which a person takes control and ownership of his/her choices. It is a process of awareness and capacity building leading to greater participation, greater decision making power and control. The core features of empowerment have been defined as the ability to define one's goals and act upon them, awareness of gendered power structures, self-esteem, and self-confidence. Student self-help groups in higher education institutions are essential for skill building for entrepreneurship and workmanship.

Under this project the institution organized various programs to generate revenue by making cloth bags prepared and sold out within and outside of the campus to impact the environment as well to reduce single use plastic. Various practices like **Terrace Garden, Millet Lunch box, Azolla Cultivation, Renewable energy ( Solar Energy)**, productions produced. The detailed documents have been submitted herewith.



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## SHG SALES COUNTER

### -Activity report

**1.Type of Activity :** SDG ACTIVITY FOR 2023-24

**2.Title of the Event :** FASHION DESIGNING

**3.Date of the Event :** 12.08.2023 to 7.10.2023

**4.Name of the organizing Department :** Hobby Center

**5.Name of Coordinator :** Ms.Sangeetha Reddy

**6.Names & Designations of Resource Persons :** Ms.K.Sangeetha

Reddy Asst.Prof SANSKRIT

### **7.Objective of the Activity :**

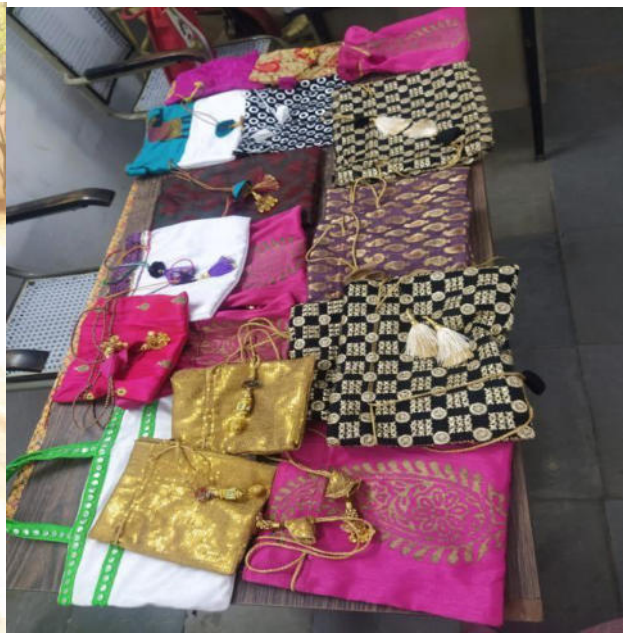
- Promoting Sustainability: Encouraging the use of cloth bags over single-use plastic bags to reduce environmental impact.
- Generating Revenue: Creating a profitable business by selling cloth bags to customers.
- Supporting Local Artisans: Showcasing handmade or locally produced cloth bags to support artisans and small businesses.
- Branding and Marketing: Using cloth bags as promotional items to increase brand visibility and eco-friendly image.
- Reducing Plastic Waste: Contributing to the reduction of plastic pollution by providing an eco-friendly alternative.

- **Educating Consumers:** Raising awareness about the benefits of using cloth bags and reducing plastic consumption.
- **Fostering Eco-Consciousness:** Encouraging consumers to make sustainable choices and adopt eco-friendly practices.

8. **Outcomes/Benefits :** The objective of selling cloth bags can vary, but some common goals include:

- **Promoting Sustainability:** Encouraging the use of cloth bags over single-use plastic bags to reduce environmental impact.
- **Generating Revenue:** Creating a profitable business by selling cloth bags to customers.
- **Supporting Local Artisans:** Showcasing handmade or locally produced cloth bags to support artisans and small businesses.
- **Branding and Marketing:** Using cloth bags as promotional items to increase brand visibility and eco-friendly image.
- **Reducing Plastic Waste:** Contributing to the reduction of plastic pollution by providing an eco-friendly alternative.
- **Educating Consumers:** Raising awareness about the benefits of using cloth bags and reducing plastic consumption.
- **Fostering Eco-Consciousness:** Encouraging consumers to make sustainable choices and adopt eco-friendly practices.
- The specific objectives may vary depending on the seller's mission and values.

**Geo Tagged:**



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## CLOTH CARRY BAG IN COLLEGE

**-Activity report**

**1.Type of Activity : SDG ACTIVITY FOR 2023-24**

**2.Title of the Event : FASHION DESIGNING**

**3.Date of the Event : c**

**4.Name of the organizing : Hobby Center**

**5.Name of Coordinator : Ms.Sangeetha Reddy**

**6.Weblink of Activity :**

[link1](#)

[link 2](#)

Brochure:





7. **Names & Designations of Resource Persons :** Ms.K.Sangeetha Reddy Asst.Prof SANSKRIT

8. **No of Participants List :** 25

9. **Objective of the Activity :**

- **Environmentally Friendly:** Cloth bags are reusable, reducing the need for single-use plastic bags, which can harm the environment.
- **Reduced Waste:** Cloth bags can be used for a long time, reducing the amount of waste generated by disposable bags.
- **Resource Conservation:** They help conserve resources like oil (used to make plastic bags) and trees (used for paper bags).
- **Durability:** Cloth bags are sturdy and can carry heavier items, making them a practical choice for shopping.
- **Cost-Effective:** While cloth bags may have a higher initial cost, their reusability saves money in the long run.
- **Fashionable and Customizable:** Cloth bags come in various designs, allowing for personal expression and style.
- **Promotion of Sustainability:** Using cloth bags promotes a culture of sustainability and reduces the negative impacts of single-use plastics.

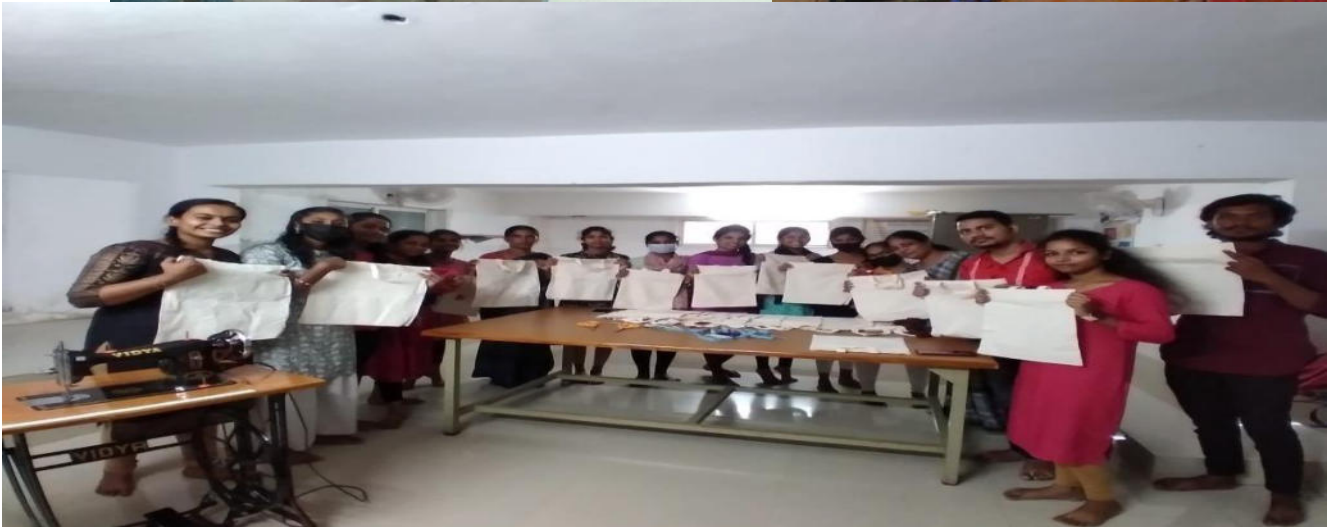
**Student coordinators :** Akshya B.Com 1A, Akshita B. Com 1A

## 10. Outcomes/Benefits :

- **Energy Efficiency:** The production of cloth bags is often more energy-efficient than the creation of plastic bags, leading to lower energy consumption.
- **Reduction of Harmful Microplastics:** Cloth bags do not shed microplastics during use, which can be a concern with some plastic bags.
- **Lower Transportation Costs:** Due to their durability and ability to hold more items, cloth bags can reduce the number of trips needed for shopping, saving on transportation costs and emissions.
- **Promotion of Ethical Labor Practices:** Some cloth bags are produced under fair labor conditions, contributing to ethical and responsible manufacturing practices.
- **Reduced Demand for Landfills:** The use of cloth bags reduces the volume of waste entering landfills, extending their lifespan and reducing the need for new landfill sites.
- **Educational Opportunities:** Cloth bags can be used as a platform for environmental education, teaching individuals and communities about the importance of sustainability.
- **Support for Nonprofit Initiatives:** Some cloth bags are sold by nonprofit organizations as a means of fundraising, supporting various social and environmental causes.
- **Strengthened Local Economies:** By supporting local cloth bag manufacturers, communities can stimulate their own economies and create jobs.

## 11. Geo tagged :





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# ***Azolla* Cultivation**

**(New Business Model)**



**Smart Farming Method for Small Farmer Communities**

# Project Proposal

The Department of Botany is pleased to inform you that the students of B.Sc (B.Z.C) are willing to start *Azolla* cultivation in the campus as a pilot project to show it as a New Business Model to help small farmer communities. This is a sustainable farming method and has social, ecological and economic value propositions.

*Azolla* cultivation helps to reduce man made climate change, used as a biofertilizer, a mosquito repellent, a potential livestock feed and above all as a bio-scavenger as it takes away all heavy metals.

In India, Subudhi & Singh (1978) concluded that fresh *Azolla* could replace about 20% of commercial feed in the diet of young chickens.

## **Adopt Smart Farming by cultivating *Azolla***

*Azolla microphylla* is a small aquatic fern with a branched stem and bi-lobed leaves. The roots that emerge from the stem help the plants to float on water. It is generally found floating on stagnant water. There is a small cavity on the upper most part of the leaf which houses as many as 80,000 blue green algae which have the capacity to fix atmospheric nitrogen and make it available to *Azolla*. In return the blue green algae gets shelter and food from *Azolla* fern. When the plant dies and decays in the soil nitrogen becomes available to plants. *Azolla microphylla* is reported to be most suitable for livestock feeding.

## **Production of *Azolla***

*Azolla* can be multiplied easily even by an ordinary farmer. There are mainly two methods of *Azolla* multiplication:

- (i) Standing water method and
- (ii) Nursery method.

**Standing water method:** Under this method, a pond or a field with shallow standing water is chosen. The depth of water required for *Azolla* cultivation varies between 5-10 cms. For the rapid growth of *Azolla*, application of super phosphate (4-8 kg P<sub>2</sub> O<sub>5</sub> /ha) is recommended. *Azolla* inoculum can be introduced in standing water also. In three weeks time *Azolla* multiplies to form a carpet on the water surface, which can be collected and used immediately or dried and preserved for later use. The process is repeated to produce more *Azolla* culture.



## ii. *Azolla* nurseries

*Azolla* is raised in small nursery plots of 50-100 square metre size with strong bunds all around so that water can be made to stand up to a height of 5-10 cm. However, in a newly constructed nursery plot retaining water is a problem due to high percolation rate. To control this, puddling is done. Compacting the soil can also control percolation. Plastering the bottom and sides with a mixture of cow dung and fine clay is yet another effective method of controlling percolation. Permanent *Azolla* nurseries can be constructed with brick and cement. Spreading polythene sheets at the bottom of the nursery beds can also control percolation. Small nursery beds are advantageous compared to large plots as wind causes drifting of *Azolla* towards one side in large plots.



When the plots are prepared and sufficient amount of water is filled inside, super phosphate (4-8 kg P<sub>2</sub>O<sub>5</sub> per ha) should be applied before introducing the *Azolla* inoculum. *Azolla* can be multiplied easily through any broken part of the plant. Hence, production and use of spores for *Azolla* multiplication has not been developed. For inoculating nursery beds fresh *Azolla* are spread at the rate of 300-400 gram per square metre. It can produce 8-10 tonnes of green biomass in 20 days that can be collected and applied in the field or dried and stored for later use.

### Method of application

*Azolla* can be applied in two ways: green manure form and dual crop form. *Azolla* is usually applied in rice fields in both ways.

**Green Manure form:** In this method, *Azolla* biomass is incorporated into the field prior to rice plantation. It can be either grown in the same field before transplanting rice or grown in nursery beds and then transported and incorporated into the field by puddling. *Azolla*, when incorporated into the soil,

decomposes rapidly with 7-10 days. However, nitrogen availability extends from one week to ten weeks. Experiments have shown that 34% of the total nitrogen is available two weeks after incorporation, 63% after 4 weeks, 76% after 6 weeks and 85% after 8 weeks. Application of *Azolla* in the green form produces better results than dry form.

**Dual crop form:** This method involves growing *Azolla* along with rice crop. One week after the planting of rice seedlings, fresh *Azolla* at the rate of 200-300 gm per square metre should be applied in standing crops. *Azolla* biomass is formed in three weeks. Water is drained out and *Azolla* is incorporated into the soil.

### **Preservation of inoculums**

*Azolla* does not thrive under adverse conditions: extreme cold or heat. But it can be preserved even under such adverse conditions in very slow moving water bodies such as streams, canals, sewage channels, small ponds and tanks and unused wells. They are known as inoculum banks. The optimum temperature for *Azolla* ranges between 15-35 ° C.

### **Environmental Requirements for *Azolla* Farming**

1. *Azolla* needs partial shade and light, the average temperature range is around 20 - 30°C.
2. The fern is extremely sensitive to lack of water, the minimum water level should be 4".
3. The pH of growing medium should be in between 5 – 7.

### **Material Requirement for *Azolla* farming**

1. Two Trenches
2. Sieved fertile soil
3. Cow dung
4. Super phosphate and mineral nutrients
5. Clean water
6. Shade net
7. Bamboos

Approximate cost: Rs. 7,300/- (Seven Thousand two hundred) only.

Sale Price of *Azolla* leaves per Kg: Rs.300/-

After 20 days *Azolla* is harvested @ 1.5 Kg / Day

So monthly income from harvesting *Azolla* is estimated to be Rs.13,500/-

The profit from the farm is around Rs. 6,200/-

**Project Start Date: 20.02.2021**

**Adopt Smart Farming by cultivating *Azolla***

Mother culture is maintained in a separate unit. *Azolla* cultivated in the rock garden pond of the campus. We are willing to provide *Azolla* mother culture to interested farmers / general public in a limited way. It can enhance soil fertility and increases 20% milk production in cattle.



**Pond with *Azolla***



**Harvesting *Azolla* (23.03.2021)**

**Program Details / Outcome:** Students of BZC came up with a proposal to start *Azolla* cultivation in the campus as a business model for small farmer communities in the academic year 2019 – 20, but due to COVID – 19 pandemic we were not able to implement in the same academic year. This academic year (2020 – 21) we want to initiate the project and show it as a new business model for farmers as there is no major financial burden on the farmers to start it commercially. *Azolla* is used as a biofertilizer, mosquito repellent and a potential feed for livestock. Students were able to pursue it as a career option after this experience.



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## Urban Farming through Terrace Gardening

Activity: Student Project – Terrace Gardening

No of Participants: 15



Terrace Gardening was taken up as the student project to demonstrate the urban organic farming technique to all the students, staff and general public. Students who enrolled for the certificate course on organic farming wanted to have hands-on experience of the same which they have studied in the course, hence established the Terrace Garden in a limited area on the terrace of Life Sciences Block of the campus.

Urban farming is a process of using innovative scientific farming techniques to produce high yield and high quality of fresh organic food in very limited urban areas like terraces and balconies, all year -round. It is seen to have many advantages including

1. Non- dependence on vagaries of Climate,
2. Wet waste as compost,
3. Reduction of carbon footprints etc.
4. Terrace gardens bring back the missing link between man and nature though on a moderate level,
5. Maximum meaningful use of minimum available space.
6. An economical way of balancing green space with uncontrolled growth of concrete structures in urban areas.
7. Having a kitchen garden at home ensures that one's home becomes a zero-food waste home as all food waste is typically recycled back to feed the plants.

This project is based on the core value of sustainability and is about a small approach towards how the Department of Botany can contribute to this trend of a green living. Intend to start as a small project in limited area to demonstrate

and widen people's knowledge on urban farming and how it can be developed. These are mainly built in order to encourage people to utilize waste lands within the city and promote healthy livings which also will lead to an economically sustainable society.

Education is a necessity but Sustainable Education is the need. A.V.College has four core objectives when it comes to sustainability

1. Working towards sustainable education
2. Working towards a healthy environment
3. Working towards social wellbeing
4. Working towards a thriving economy.

Hence for us by default terrace gardening is only about growing food in an organic and sustainable manner using only organic resources and waste available. Urban Farming Project therefore is another form added in the Umbrella of A.V. sustainability Education and tries to inculcate among all that it would be the way of life.

**Program Details / Outcome:** Students established Terrace Garden as a project to demonstrate the urban farming method in a sustainable way. Students used the compost from our campus vermicompost pit. Students used Grow bags and used Bottles for cultivation, especially the leafy vegetables. Students have taken up this project to have hands-on experience of organic cultivation of vegetables. Students were able to learn the method of composting the bio-waste and how to grow our own vegetables in the limited space.



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### Millet Lunch Box Policy

**Implement 'Millet Lunch Box Policy' or 'Millet Food'** and issue notices/circulars. (Weekly once; Minimum 4 weeks activity)

|       |  |   |
|-------|--|---|
| S. No | Particulars                                  | Details: Please write in min. 1 to 2 sentences. One word responses are not accepted. Write complete sentences.  |
|       | Material / Resources                         | circulars / Notices   |
|       | Tima Aspects                                 | Conduct Weekly once with follow up. (Minimum Six Weeks activity)  |
|       | Place Aspects                                | Institution / Campus  |
|       | Procedure Aspects                            | Communicated to the staff/ students to bring millet food items on a particular day of the week example: Every Thursday will be "Millet Lunch Box Day". This is a voluntary responsibility based on the possibility.   |
|       |  | This activity supported by a pledge.  |
|       | Promotion                                    | Sent reminders one day in advance. That is to send reminders on Wednesday.  |
|       | Total number of students participated        | 30 No's   |
|       | Name of the Faculty Coordinator (s)          | 2 Members; Ms.B.Sudixita, Ms.K.Sreelakshmi  |
|       | Student Self Help Clubs members Names        | P. Harshitha, V. Sai Keerthi  |
|       | Duration of activity conducted/ performed    | Weekly 1 Hour (6 Weeks; 6 Hrs)  |
|       | Date/Dates on which activity was performed ? | 20 <sup>th</sup> July 2023, 27 <sup>th</sup> July 2023, 3 <sup>rd</sup> August 2023, 10 <sup>th</sup> August 2023, 17 <sup>th</sup> August 2023, 24 <sup>th</sup> August 2023.  |
|       | What are the outcomes?                       | <ol style="list-style-type: none"> <li>1. Awareness and Improvement in students for having a healthier lunch box.</li> <li>2. Inclusion of millets was observed.</li> </ol>   |
|       | How was planning done for this activity?     | <ol style="list-style-type: none"> <li>1. A meeting was conducted on 13th July at 12:00 pm, by the Convenors of the Life Navigators–Self Help Group under the direction of Vice–Principal, Dr. P. Padma.</li> <li>2. Faculty, Department of Clinical Nutrition &amp; Dietetics along with self help club – members and students arranged a meeting for implementation and checking of lunch boxes whether everyone had millets/ millet based items for the lunch.</li> <li>3. A circular was prepared and circulated to all the groups, stating that A.V. College initiating Millet Lunch Box Policy and all are requested to follow this policy by including millets / millet based food for lunch on every Thursday in a week.</li> <li>4. The Department of Nutrition planned to provide millet lunch for those who are not able to get it from home/ hostel and are willing to pay for it.</li> </ol> |

|  |   |  |
|--|---|--|
|  | What were the materials available for conducting the activity?                    | Prepared Notice, Food ingredients, utensils, Gas, Gas burners, eco–friendly disposable cups and spoons. <a href="#">Notice – Millet Lunch Box Policy</a>   |
|  | How did you manage to collect the material required for the activity?             | Checking the availability of resources,<br>Planning and arranging,<br>Purchasing,<br>Preparation   |
|  | Mention the materials used during the activity? What is the role of the material? | Millets and Food ingredients.<br>Millets are climate resilient future crops and also have low glycemic index and are packed with minerals and essential nutrients. The program intends to promote the consumption of millets on a regular basis. |
|  | Were you aware of this activity earlier?  | No we weren't  |
|  | Has been this activity covered in local newspaper?                                | Not advertised but posted on our college website.  |
|  | Did you collaborate with other  | Yes, in one school conducted an activity to create awareness about millets   |

|     |  |   |
|-----|--|---|
|     | organizations to create a bigger impact?   | and nutritious diet, now, planning to expand and reach out to larger sections of the society.   |
|     | Has the organizing team prepare and follow a check list for conducting the activity?   | Yes the details were documented   |
|     | Where did you conduct this program?  | College campus  |
|     | What are the steps involved in conducting the activity work? / Mention step by step procedure followed? Write in bullet points. Describe in detail min 100 words.  | <ul style="list-style-type: none"> <li>● Step I – Collection of data to take orders for millet lunch box from the Department</li> <li>● Step II – Writing down of ingredients and quantity</li> <li>● Step III – Buying the ingredients</li> <li>● Step IV – Preparation of the item</li> <li>● Step V – Packing the food</li> <li>● Step VI – Distribution of millet lunch box</li> <li>● <a href="#">Report – SIRI Mantra – Changing the way A.V.College Eats.</a></li> </ul> |
|     | What are the precautions taken for conducting the activity?  | Basic hygiene principles were followed during checking and handling of the food products.   |
|     | What were the tools/ support systems used for conducting the activity?   | Used social media platforms for reminders and circulars.  |
|     | What was your learning at various steps of implementation of the activity?   | <ul style="list-style-type: none"> <li>➤</li> <li>➤ Students co-ordination as a teamwork</li> <li>➤ Awareness of millets and its recipes</li> <li>➤ Health benefits of millets</li> <li>➤ Identified gaps in knowledge</li> <li>➤ Build confidence</li> </ul>   |
|     | How was the support from the students/neighborhood/ village/school.  | The organization, faculty and students extended their support in a positive manner.   |
|     | Write down the new ideas to solve environmental issues through this activity.  | Creation of multiple healthier options using millets to overcome lifestyle disorders,<br>Eco Friendly<br><br>materials were used for sustainable living.  |
| 22. | What have you learned from this process while working for the District Eco–SDGs Championship 2023?   | <ul style="list-style-type: none"> <li>➤ Awareness of millets in the society</li> <li>➤ Health benefits upon consumption</li> <li>➤ Practices of sustainable living</li> </ul>  |
| 23. | Did you collect the feedback from the participants of the activity?  | Yes, which improved and implemented in the consecutive weeks.   |
| 24. | How many videos are there in this Activity?  | 02  |
| 25. | Share the link of Video/ videos.   |   |
|     | Sharing could be done via Google Drive or YouTube after uploading. Share the videos to us via Google Drive with access to <b>'Anyone with the link' (View) Option</b> . If the videos are not accessible the marks will not be counted. You can also share the |   |



link of YouTube after uploading the video onto it.

Did you post the video on social media through the Institution/ College? If yes, Share us the link

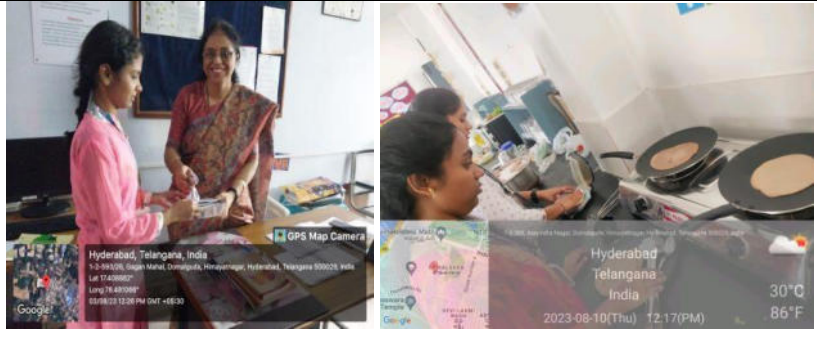
Paste **8 photos** captured during conducting the activities **without** GPS location.



Also Paste 4 photos **with** GPS location







|  |   |   |
|--|---|---|
|  |   |   |
|  | Paste Newspaper clippings if Any.   | - |
|  | Share the link of the Facebook if you have done mass media campaign.  | - |
|  | Evaluate yourself: How many points you will award for yourself in conducting the activity on a scale of 1 to 5. | 4 |
|  | Any notes/Remarks   | - |

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## Solar Power



PG Block 1



PG Block 2



Biotech Block



Commerce block

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# Renewable Energy

## Solar Energy

Humans have been harnessing solar energy for thousands of years—to grow crops, stay warm, and dry foods. According to the National Renewable Energy Laboratory, “more energy from the sun falls on the earth in one hour than is used by everyone in the world in one year.” Today, we use the sun’s rays in many ways—to heat homes and businesses, to warm water, and to power devices.

### Solar panels on the rooftops

Distributed solar systems generate electricity locally for homes and businesses, either through rooftop panels or community projects that power entire neighborhoods. Solar farms can generate enough power for thousands of homes, using mirrors to concentrate sunlight across acres of solar cells. Floating solar farms—or “floatovoltaics”—can be an effective use of wastewater facilities and bodies of water that aren’t ecologically sensitive.

Solar energy systems don’t produce air pollutants or greenhouse gases, and as long as they are responsibly sited, most solar panels have few environmental impacts beyond the manufacturing process



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