

**GREEN AUDIT REPORT**  
of  
**YASHWANTRAO CHAVAN MAHARASHTRA**  
**OPEN UNIVERSITY,**  
Dnyangangotri, Near Gangapur Dam,  
Nashik 422 222



**ज्ञानगंगा घरोघरी**

**Year: 2020-21**

Prepared by:

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**MAHARASHTRA ENERGY DEVELOPMENT AGENCY**

An ISO 9001 : 2000 Reg. no. : RQ 91 / 2462



**Maharashtra Energy Development Agency**

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ECN/2021-22/CR-14/1577

22<sup>nd</sup> April, 2021

**CERTIFICATE OF REGISTRATION  
FOR CLASS 'A'**

We hereby certify that, the firm having following particulars is registered with **MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)** under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

**Name and Address of the firm** : M/s Enrich Consultants  
Yashashree, Plot No. 26, Nirmal Bag Society,  
Near Muktangan English School, Parvati,  
Pune - 411009.

**Registration Category** : *Empanelled Consultant for Energy Conservation  
Programme for Class 'A'*

**Registration Number** : *MEDA/ECN/2021-22/Class A/EA-03*

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till **21<sup>st</sup> April, 2023** from the date of registration, to carry out energy audits under the Energy Conservation Programme
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.

General Manager (EC)

## Enrich Consultants

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Tel: 09890444795 Email: [enrichcons@gmail.com](mailto:enrichcons@gmail.com)

Ref: EC/YCMOU/21-22/02

Date: 10/6/2021

### CERTIFICATE


This is to certify that we have conducted **Green Audit** at Yashwantrao Chavan Maharashtra Open University, Dnyangangotri, Near Gangapur Dam, Nashik in the year 2020-21.

The University has already adopted following **Green** practices:

- Usage of Energy Efficient LED Fittings
- Maximum Usage of Day Lighting in the campus
- Installation of **13625 LPD** Solar Thermal Water Heating System.
- Installation of a Bio gas Plant
- Construction of Internal Bandhara of Capacity **26.2 Million Liters**
- Construction of Farm pond
- Rain Water Harvesting project for making use of rain water falling on terrace
- Segregation of Recyclable Waste at source
- Installation of Sanitary pad dispenser and incinerator

We appreciate the support of Management and involvement of faculty members and staff members in the process of making the campus Energy Efficient and Green.

For Enrich Consultants,

  
**A Y Mehendale,**  
Certified Energy Auditor  
EA-8192





**H. B. Patil**  
Environmental Auditor



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## **ACKNOWLEDGEMENT**

We Enrich Consultants, Pune, express our sincere gratitude to the management of Yashwantrao Chavan Maharashtra Open University, Dnyangangotri, Near Gangapur Dam, Nashik 422 222 for awarding us the assignment of Green Audit of their Nashik Campus, for the Year: 2020-21.

We are thankful to:

- Prof. E. Vayunandan, Vice chancellor
- Dr. Dinesh Bhonde, Registrar
- Dr. Surya Gunjal, NAAC Coordinator
- Dr. Vijaya Patil, Associate Professor, School of Education
- Shri Kiran Hire, Executive Engineer
- Shri Sandip Bhagwat, Farm Manager, Krishi Vigyan Kendra

We are also thankful to other Staff members for helping us during the field study.

## EXECUTIVE SUMMARY

After the Field Study & analysis, we present herewith important observations made during the assignment of Green Audit.

**1. Yashwantrao Chavan Maharashtra Open University, Nashik** Energy in three forms, namely: **Electrical Energy, Diesel and LPG.**

### 2. Present Energy Consumption:

| No | Parameter/<br>Value | Electrical Energy<br>Consumed, kWh | LPG<br>Consumed,<br>Kg | Diesel<br>Consumed,<br>Liters | CO <sub>2</sub> Emissions,<br>MT |
|----|---------------------|------------------------------------|------------------------|-------------------------------|----------------------------------|
| 1  | Total               | 488779                             | 290                    | 5708                          | 456.05                           |
| 2  | Maximum             | 50557                              | 43.5                   | 1349                          | 45.59                            |
| 3  | Minimum             | 34505                              | 0                      | 0                             | 32.72                            |
| 4  | Average             | 40731.58                           | 24.17                  | 475.67                        | 38.00                            |

### 3. Energy Conservation Projects already installed:

- Usage of Energy Efficient LED fittings
- Usage of Maximum Day Lighting
- Installation of **13625 LPD** Solar Thermal Water Heating System.

### 4. Usage of Renewable Energy:

- The University has installed a **13625 LPD** Solar Thermal Water Heating System.
- The percentage of usage of Renewable Energy to Annual Energy Demand is **17.29 %**.
- The reduction in CO<sub>2</sub> emissions due to Solar Thermal Water Heating System is **91.97 MT/Annum**.

### 5. Waste Management:

#### 5.1 Solid Waste Management:

- **Segregation of Waste at Source & Recycling:** The recyclable waste, like paper, board etc. is segregated at source. There are separate bins for collection at various points and is disposed of for further for recycling.
- **Vermi-Composting:** The University has Vermi-composting facility & about **100 MT** of Vermi compost is produced in a year.
- **Biogas Plant:** The University has installed a Biogas plant at the Yash Inn facility, to convert the kitchen waste into bio gas, which in turn is used for cooking, which leads to saving in consumption of LPG.

#### 5.2 E-Waste Management:

- For E-Waste management, the University follows the Methodology, as per the Government Regulations & it is disposed of by calling the tenders.



### 5.3 Liquid Waste Management:

- It is recommended to go for a Sewage Treatment Plant, for recycling of the liquid waste.

### 6. Rain Water Harvesting:

The University has already installed Rain Water Harvesting Project in three ways:

- Constructing **Yashwant Bandhara** of storage capacity **26.2 Million Liters**,
- Farm pond
- Proper channelizing the rain water falling on the terrace of Main building & Library.

### 7. Green & Innovative Practices:

- **Smoke Free & Plastic Free Campus:** At various locations in the University campus boards are displayed, for making the Campus Smoke & Plastic free.
- **Paperless Office:** The University has adopted a Software based system with respect to almost thirteen types of various operations involved on Day-to-Day basis.
- **Participation Swachh Bharat Abhiyan:** The University is an active participant of the Government's Prestigious Swachh Bharat Abhiyan. There are adequate toilets in the facility with sufficient water. The University has adopted Ghanshe Village and now the Village is Open Defecation Free (ODF) Village.
- **Green Cover in the Campus:** Out of total area of 150 Acres, more than 90% of the area is under Green Cover,
- **Usage of Sanitary Dispenser & Incinerator:** The University has sanitary pad dispenser as well as incinerator for disposal of the sanitary waste.

### 8. Eco Friendly & Sustainable Initiatives:

- **Participation in Unnat Bharat Abhiyan:** The University is actively participating in the **Unnat Bharat Abhiyan** and community development activities are undertaken under this.
- **Participation in National Service Scheme:** About 3200 plus students from affiliated Learning centers have carried out many activities like Tree Plantation, Water Conservation, Road construction in the adopted villages.
- **Construction of a Model Eco Friendly, Energy Efficient Bamboo House:** The University has built a Model, Energy Efficient, and Low Cost Bamboo House making use of locally available material like Bamboo, grass etc.

### 9. Assumptions:

1. **1 kWh** of Electrical Energy releases **0.9 Kg of CO<sub>2</sub>** into atmosphere
2. **1 Kg of LPG** releases **2.93 Kg of CO<sub>2</sub>** into atmosphere
3. **1 Liter of Diesel** emits **2.68 Kg of CO<sub>2</sub>** into atmosphere.
4. Daily working hours-**7 to 12 Nos.**
5. Annual working Days-**250 to 365 Nos.**
6. Load Factor for use of Solar Thermal Water Heating System: **50%**

#### **10. Recommendations:**

1. Install Roof Top Solar PV Plant
2. Replace 600 Nos T-5 Fittings by 20 W LED Fittings
3. To set target of reduction in use of paper by about 5 % on year-to-year basis.
4. To install a Bio Sewage Treatment Plant.

#### **11. References:**

- For calculation of CO<sub>2</sub> Emissions: [www.tatapower.com](http://www.tatapower.com)
- For Energy Saved by Solar Thermal Plant: [www.mahaurja.com](http://www.mahaurja.com)



## **ABBREVIATIONS**

|                 |                         |
|-----------------|-------------------------|
| kWh             | Kilo Watt Hour          |
| kWp             | Kilo Watt Peak          |
| Kg              | Kilo Gram               |
| MT              | Metric Ton              |
| CO <sub>2</sub> | Carbon Di Oxide         |
| LPD             | Liters per Day          |
| LPG             | Liquefied Petroleum Gas |
| LED             | Light Emitting Diode    |
| Qty             | Quantity                |
| m               | Meters                  |
| L               | Length                  |
| B               | Breadth                 |
| H               | Height                  |

## **CHAPTER-I INTRODUCTION**

### **1.1 Objectives:**

1. To study present level of Energy Consumption
2. To study the present CO<sub>2</sub> emissions
3. To study usage of Renewable Energy
4. To study Waste Management: Solid, Liquid and e-waste.
5. To study Rain Water harvesting
6. To study Green and Innovative practices.

### **1.2 Table No 1: General Details of the University:**

| <b>No</b> | <b>Head</b>               | <b>Particulars</b>                               |
|-----------|---------------------------|--|
| 1         | Name of Institution       | Yashwantrao Chavan Maharashtra Open University   |
| 2         | Address                   | Dnyangangotri, Near Gangapur Dam, Nashik 422 222 |
| 3         | Year of Establishment     | 1989   |
| 4         | Academic Programs Offered | 200 Plus   |

## CHAPTER-II

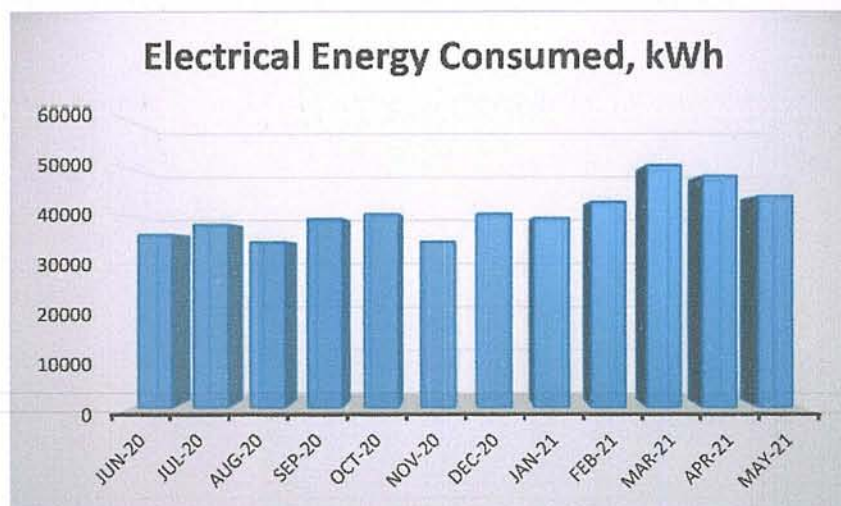
### STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Energy Consumption

**2.1 Table No 2: Study of Electrical Energy. LPG and Diesel Consumption: 20-21:**

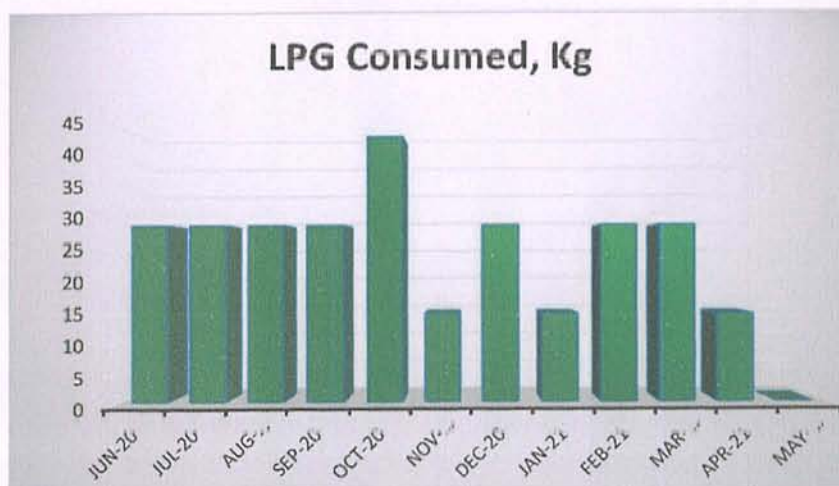
| No | Month   | Electrical Energy Consumed, kWh | LPG Consumed, Kg | Diesel Consumed, Liters |
|----|---------|---------------------------------|------------------|-------------------------|
| 1  | Jun-20  | 36095                           | 29               | 1349                    |
| 2  | Jul-20  | 38204                           | 29               | 931                     |
| 3  | Aug-20  | 34505                           | 29               | 591                     |
| 4  | Sep-20  | 39347                           | 29               | 623                     |
| 5  | Oct-20  | 40380                           | 43.5             | 606                     |
| 6  | Nov-20  | 34592                           | 14.5             | 600                     |
| 7  | Dec-20  | 40408                           | 29               | 382                     |
| 8  | Jan-21  | 39511                           | 14.5             | 626                     |
| 9  | Feb-21  | 42847                           | 29               | 0                       |
| 10 | Mar-21  | 50557                           | 29               | 0                       |
| 11 | Apr-21  | 48321                           | 14.5             | 0                       |
| 12 | May-21  | 44012                           | 0                | 0                       |
| 13 | Total   | 488779                          | 290              | 5708                    |
| 14 | Maximum | 50557                           | 43.5             | 1349                    |
| 15 | Minimum | 34505                           | 0                | 0                       |
| 16 | Average | 40731.58                        | 24.17            | 475.67                  |

**2.2 To study the variation of Monthly Electrical Energy Consumption: Chart No: 1:**

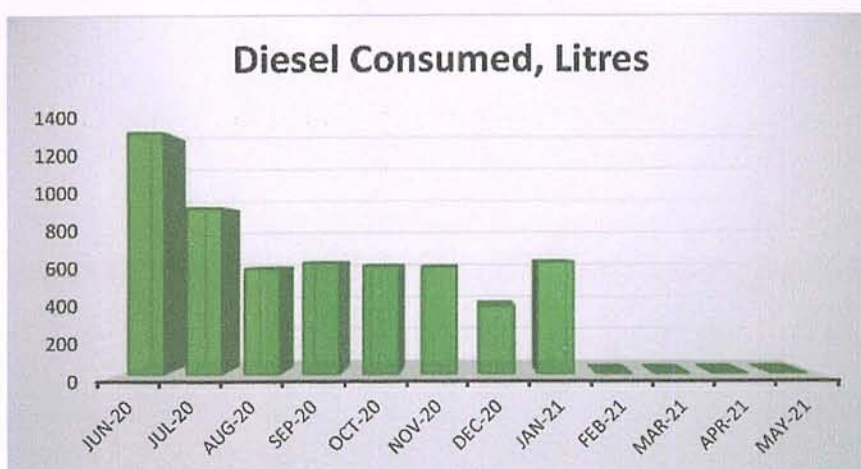




### 2.3 Study of Month wise LPG Consumption: Chart No 2:



### 2.4 Study of Month wise Diesel Consumption: Chart No 3:



From the above analysis, we present following important parameters:

**Table No 3: Variation in Important Parameters:**

| No | Parameter/ Value | Electrical Energy Consumed, kWh | LPG Consumed, Kg | Diesel Consumed, Liters |
|----|------------------|---------------------------------|------------------|-------------------------|
| 1  | Total            | 488779                          | 290              | 5708                    |
| 2  | Maximum          | 50557                           | 43.5             | 1349                    |
| 3  | Minimum          | 34505                           | 0                | 0                       |
| 4  | Average          | 40731.58                        | 24.17            | 475.67                  |

### CHAPTER-III

#### CARBON FOOTPRINTING

**A Carbon Foot print** is defined as the Total Greenhouse Gas emissions, emitted due to various activities.

In this we compute the emissions of Carbon-Di-Oxide, by usage of the various forms of Energy used by the University for performing its day to day activities

The University uses three forms of Energy namely: Electrical Energy for various Electrical gadgets, LPG and Diesel.

#### Basis for computation of CO<sub>2</sub> Emissions:

The basis of Calculation for CO<sub>2</sub> emissions due to LPG & Electrical Energy are as under

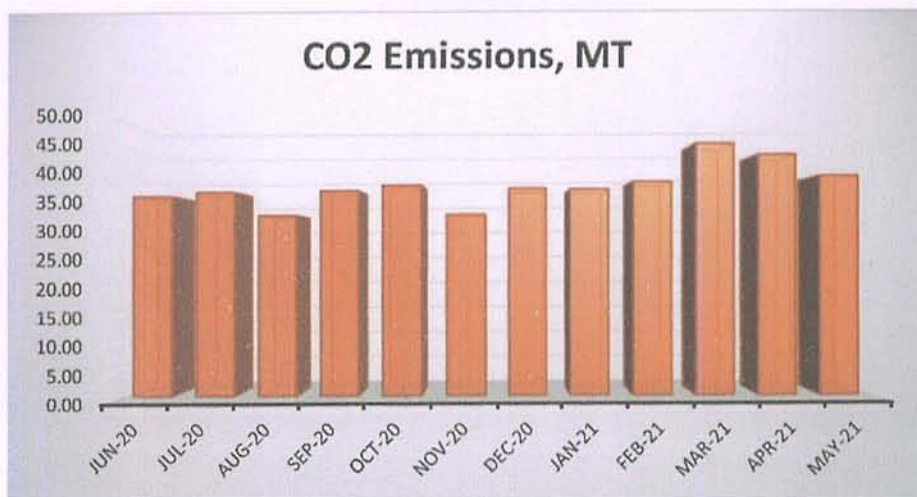
- 1 Unit (kWh) of Electrical Energy releases **0.9 Kg of CO<sub>2</sub>** into atmosphere
- 1 Kg of LPG releases **2.93 Kg** of CO<sub>2</sub> into atmosphere.
- 1 Liter of Diesel releases **2.68 Kg** of CO<sub>2</sub> into atmosphere.

Based on the above Data we compute the CO<sub>2</sub> emissions which are being released in to the atmosphere by the University due to its Day to Day operations

**Table No 4: Month wise Energy Consumption & CO<sub>2</sub> Emissions:**

| No | Month   | Electrical Energy Consumed, kWh | LPG Consumed, Kg | Diesel Consumed, Liters | CO <sub>2</sub> Emissions, MT |
|----|---------|---------------------------------|------------------|-------------------------|-------------------------------|
| 1  | Jun-20  | 36095                           | 29               | 1349                    | 36.19                         |
| 2  | Jul-20  | 38204                           | 29               | 931                     | 36.96                         |
| 3  | Aug-20  | 34505                           | 29               | 591                     | 32.72                         |
| 4  | Sep-20  | 39347                           | 29               | 623                     | 37.17                         |
| 5  | Oct-20  | 40380                           | 43.5             | 606                     | 38.09                         |
| 6  | Nov-20  | 31592                           | 14.5             | 600                     | 32.78                         |
| 7  | Dec-20  | 40408                           | 29               | 382                     | 37.48                         |
| 8  | Jan-21  | 39511                           | 14.5             | 626                     | 37.28                         |
| 9  | Feb-21  | 42847                           | 29               | 0                       | 38.65                         |
| 10 | Mar-21  | 50557                           | 29               | 0                       | 45.59                         |
| 11 | Apr-21  | 48321                           | 14.5             | 0                       | 43.53                         |
| 12 | May-21  | 44012                           | 0                | 0                       | 39.61                         |
| 13 | Total   | 488779                          | 290              | 5708                    | 456.05                        |
| 14 | Maximum | 50557                           | 43.5             | 1349                    | 45.59                         |
| 15 | Minimum | 34505                           | 0                | 0                       | 32.72                         |
| 16 | Average | 40731.58                        | 24.17            | 475.67                  | 38.00                         |

**Representation of Month wise CO<sub>2</sub> emissions: Chart No: 4:**





## CHAPTER-IV

### STUDY OF RENEWABLE ENERGY INITIATIVES

The University has Installed Solar Thermal Water Heating System. The details of installation are as under.

**Table No 5: Details of Solar Thermal Water Heating System:**

| No | Location        | Capacity in LPD |
|----|-----------------|-----------------|
| 1  | Yash Inn Centre | 8625            |
| 2  | Godawari Hostel | 2500            |
| 3  | Abhyagat Niwas  | 2500            |
| 4  | <b>Total</b>    | <b>13625</b>    |

**Table No 6: Percentage of Usage of Alternate Energy:**

| No | Particulars   | Value  | Unit |
|----|---|--------|------|
| 1  | Energy purchased from MSEDCL in the Year: 2020-21                                       | 488779 | kWh  |
| 2  | Capacity of Solar Thermal Water Heating System  | 13625  | LPD  |
| 3  | Electrical Energy Saved by 100 LPD Solar Thermal System per annum                       | 1500   | kWh  |
| 4  | For calculations, we assume the Annual Energy saved in the year:20-21                   | 750    | kWh  |
| 5  | Annual Equivalent Energy Saved by Solar Thermal System                                  | 102188 | Nos  |
| 6  | Total Annual Electrical Energy Requirement $= (1) + (5)$                                | 590967 | kWh  |
| 8  | Percent of Alternate Energy to Annual Energy Requirement $= \frac{(6) \times 100}{(7)}$ | 17.29  | %    |

**Photograph of Solar Thermal Water Heating System: At Yash Inn Facility:**



**4.4 Computation of Reduction in CO<sub>2</sub> emission: Table No 7:**

| No | Particulars   | Value         | Unit                  |
|----|---|---------------|-----------------------|
| 1  | Capacity of Solar Thermal Water Heating System                              | 13625         | LPD                   |
| 2  | Electrical Energy Saved by 100 LPD Solar Thermal System per annum           | 1500          | kWh                   |
| 3  | For calculations, we assume the Annual Energy saved in the year:20-21       | 750           | kWh                   |
| 4  | Annual Equivalent Energy Saved by Solar Thermal System                      | <b>102188</b> | kWh                   |
| 5  | 1 kWh of Electrical Energy emits  | 0.9           | Kg of CO <sub>2</sub> |
| 6  | Reduction in CO <sub>2</sub> emission by Solar Thermal Water Heating System | <b>91.97</b>  | MT/Annum              |



## **CHAPTER V**

### **STUDY OF WASTE MANAGEMENT**

#### **5.1 Solid Waste Management:**

##### **5.1.1 Recyclable Solid Waste Management:**

The recyclable waste, namely paper waste is segregated at the source of the generation. There are about **100** plus bins for collection of waste placed at all strategic locations. This waste material is further given to Authorized vendor for further disposal & recycling.

**Photograph of Waste collection Bin:**



##### **5.1.2 Vermicomposting:**

The University has almost 140 acres of plantation. The University has installed a Vermi-Composting Plant and almost 100 MT of vermi compost is produced in this plant.

**Photograph of Vermicomposting:**





### **5.1.3 Bio Gas Plant:**

The University has installed Bio Gas Plant at the Yash Inn facility. The kitchen waste at the facility is fed in this Plant and Bio gas is generated. In the full load operation it has resulted in saving about 1 LPG Cylinder per month.

#### **Photograph of Bio Gas Plant:**



### **5.2 Liquid Waste Management:**

It is recommended to install Bio Sewage Treatment Plant, in order to treat the human waste. The treated water can be used for watering the garden trees.

### **5.3 E-Waste management:**

The E-Waste includes: PCs, Printers, pen drives, CDs etc.

For E-Waste management, the University follows the Methodology, as per the Government Regulations & it is disposed of by calling the tenders, as per the Regulations.

## **CHAPTER-VI**

### **STUDY OF RAIN WATER HARVESTING**

The University has already implemented the Rain Water Harvesting Project by two ways, namely: Farm Pond and collecting the rain water from terrace.

#### **6.1 Yashwant Bandhara:**

The dimensions of the Dund are: L=350 m \* D=15m \* H=5m

The total Water Storage capacity is about **26.2 Million Liters.**

The Dam was completed in the Year: 2001-02 with cost of **Rs 15 Lakhs.**

The water from this Dam is used for watering the Plants and for the domestic use. Only drinking water is purchased from the Nashik Municipal Council.

#### **Photograph of Yashwant Bandhara:**



#### **6.2 Farm Pond:**

The University has a farm pond which can store approximately -- million liters of Water. This farm pond has helped the nearby farmers, as the underground water level has increased substantially due to this farm pond.



**Photograph of Farm Pond:**



**6.3 Rain water harvesting from Terrace at Main Building:**

The University has laid pipes to collect the Rain Water collected on the terrace of the University buildings. Separate water channels are built to further store this collected Water to Yashwant Dam.

**Photograph of Rain Water Collecting Pipe from Terrace**





#### **6.4 Rain water harvesting from Terrace at Library Building:**

The University has laid pipes to collect the Rain Water collected on the terrace of the Library building. This water is stored and in turn used for maintaining the Lawn within the premises.

##### **Photograph of Rain Water Pipes laid on the Ground:**



## **CHAPTER-VII**

### **STUDY OF GREEN AND INNOVATIVE PRACTICES**

#### **7.1 Smoke Free Campus:**

The entire campus is smoke free. At common places boards are displayed appealing to keep the campus Smoke Free.

**Photograph of Smoke Free Campus display board: Need the photo:**



#### **7.2 Plastic Free Campus:**

The University is taking strict measures to keep the campus Plastic Free. At prominent places, boards are displayed to keep the campus Plastic Free.

**Photograph of Display board displaying Plastic Free campus at the main entrance:**





### 7.3 Pedestrian Friendly Roads:

The University has well maintained roads as to facilitate the easy movement of the commuters within the campus.

**Photograph of internal road in the campus:**



### 7.4 Paperless Office:

The University is taking various measures to make the Day-to-Day operations Paper less. There about Thirteen sections/operations wherein software based solutions are adopted are:

- ✓ E-Books Down load
- ✓ YCMOU Regional Centers
- ✓ Finance
- ✓ Admission
- ✓ Results
- ✓ Migration
- ✓ Grievances
- ✓ Scanned copy of Mark list, to name a few
- ✓ Revaluation of Answer Book
- ✓ E-Tenders

### 7.5 Plantation in the campus:

#### 7.5.1 Krishi Vigyan Kendra:

The **Indian Council Agricultural Research (ICAR)** established **Krishi Vigyan Kendra (KVK)** in the University campus on 1<sup>st</sup> October 1998.

The various mandates are:



1. On Farm Training (OFT)
2. Impart vocational Training to Farmers
3. Organization of Front Line Demonstrations (FLD)

**KVK** has developed about **100 Acres** of Model Farm, wherein various conventional and non-conventional fruits and vegetable are cultivated with Modern techniques.

#### **7.5.2 Landscaping of the Campus:**

A **landscape** is the visible features of an area of land, its landforms, and how they integrate with natural or man-made features. The character of a **landscape** helps define the self-image of the people who inhabit it and a sense of place that differentiates one region from other regions.

A comprehensive, sustainable **landscape** design typically addresses a series of **goals**: protecting the site and surrounding land and ecosystems — soil, water, and wildlife; reducing water use; limiting pesticide use; using plants and materials from local sources; minimizing mowing requirements; ensuring the health. The principles are the fundamental concepts of composition—proportion, order, **repetition**, and **unity**—that serve as guidelines to arrange or organize the features to create an aesthetically pleasing or beautiful landscape.

The University campus is spread over 150 Acres of land and is located near Gangapur Dam. Since 1989 beautification of university campus is on till date.. The Landscaping is approximately done on 20 Acres of total land.

#### **Photograph of Landscaped Garden in the Campus:**



### 7.5.3 Maintenance of Natural Forest Area:

In 1991 for development of green campus initially various forestry species plants were planted on an area of **40 acres**. Regular watering and fertilizers were applied to the plants. Wall fencing is done for the total area to protect the plantation from stray animals and also from cutting the trees for firewood by humans. At actual now total plantation has survived and fully grown. There is an increase 25 percent of plant population which are naturally germinated and survived.

#### Photograph of Natural Forest within the Campus:



### 7.5.4 Planting of Trees:

Krishi Vigyan Kendra has established a model farm on its **100 Acres** of land. Various conventional and non-conventional fruit and vegetable crops are cultivated with modern techniques. High density plantation micro irrigation system low cost technologies etc. are demonstrated so that farmers can study and adopt the technologies on their farm.

#### Photograph of Trees in the Campus:





#### **7.5.5 Development of Farms on campus:**

- The major Highlights of Farm are as under.
- Total Area under Cultivation: **120 Acres**
- Total Number of Plots: **23**
- Total Number of Fruit Crops grown: **14**
- Demonstration Units: **03**
- **Some of the Fruits: Mango, Jack Fruit, Coffee, Coconut, Grapes, to name a few**

#### **Photograph of Developed Farm:**



#### **7.5.6 Planting of Ornamental Plants:**

For beatification of our university campus we have taken initiative in which the University planted many species of ornamental plants at various sites in the campus.

#### **Photograph of Ornamental Plantation:**

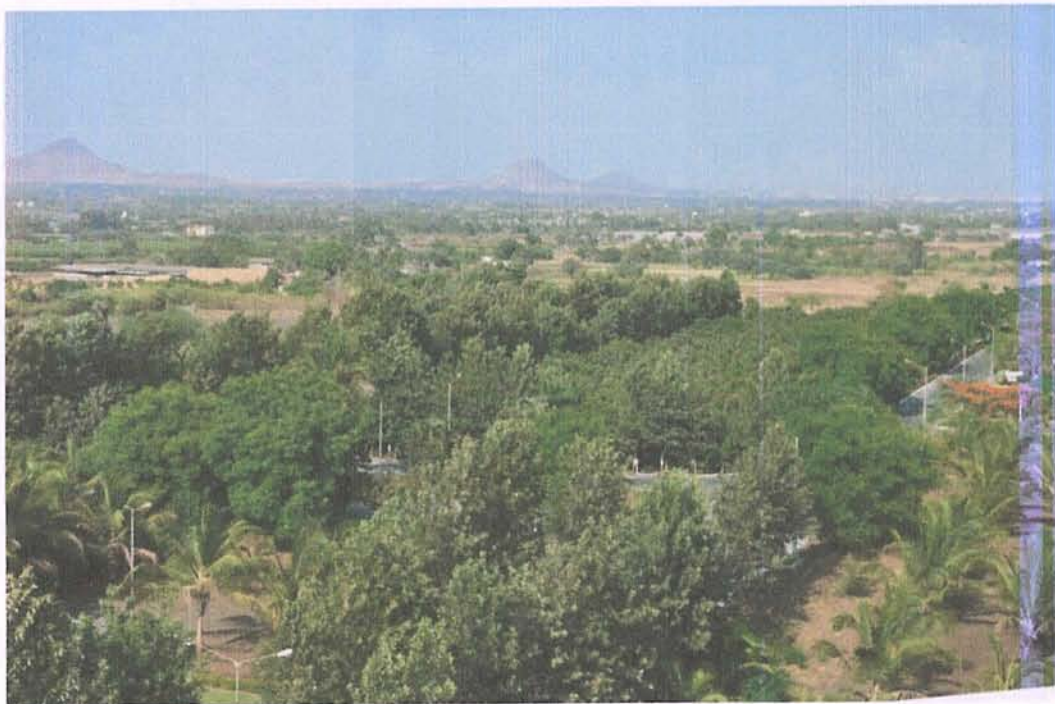




#### 7.5.7 Green Cover in the campus:

Out of a total area of 150 Acres, almost **103 Acres** of Land is under Krishi Vigyan Kendra, while 40 Acres under the plantation. More than **90%** of total area is Green.

#### Photograph of Green Cover in the campus:



#### 7.6 Participation SWACHH BHARAT ABHIYAN:

The University is an active participant in the Government of India's most prestigious project of **SWACHH BHARAT ABHIYAN**.

The important highlights under this Program are.

- The campus is **SWACHHA** from inside: Has adequate number of Toilets, The Hostel facilities are cleanly maintained, The Water supply is sufficient & the cooking equipment are modern & efficient
- There are ample number of Garbage Bins and the collection of garbage is on Daily basis
- The Garden Waste is composted by **Vermi-Composting** route
- The Kitchen waste is used for generating Bio Gas in a Bio Gas Plant
- Swachhta Lectures are held annually
- To promote the **Swachhta Abhiyan** the University has adopted **Ghanshe** Village, of population 200 & the Village is **Open Defecation Free (ODF)**

### 7.7 Sanitary Dispenser and Incinerator:

The University has sanitary pad dispenser as well as incinerator for disposal of the sanitary waste. The napkins are made available at a very nominal cost of Rs 5/- per unit.

As the university has installed the Incinerator, the disposal of pads is carried out in an environmentally friendly manner.

#### Photograph of Sanitary Dispenser & Incinerator:





## **CHAPTER VIII**

### **STUDY OF ECO FRIENDLY & SUSTAINABLE INITIATIVES**

In this Chapter, we discuss the various Eco Friendly and Sustainable Initiatives undertaken by the University.

#### **8.1 Participation in Unnat Bharat Abhiyan:**

Under this Program, the following activities are taken in the adopted Village:  
Disseminating the information on:

- Need & Importance of Personal Hygiene & Sanitation
- Hygiene of Water resources
- Waste Water treatment
- Promotion of importance of Nutrition among the rural communities

#### **8.2 Participation of Affiliated Colleges in National Service Scheme (NSS) Program:**

Under the University there are about 50 Plus Learning centers. From these affiliated centers, about 3200 plus students are involved in the National Service Scheme (NSS) program.  
The major activities under this Program are:

- Tree Plantation Campaign
- Water conservation
- Health awareness and road construction in adopted **Ghanshe & Kumbhale** Villages in Nashik District

#### **8.3 Low Cost Energy Efficient Model Bamboo House:**

In order to build a small house with minimum usage of external items and maximum use of Eco friendly and readily available Agro material, the University has built a Model Bamboo house in the University campus.

The major highlights of this House are:

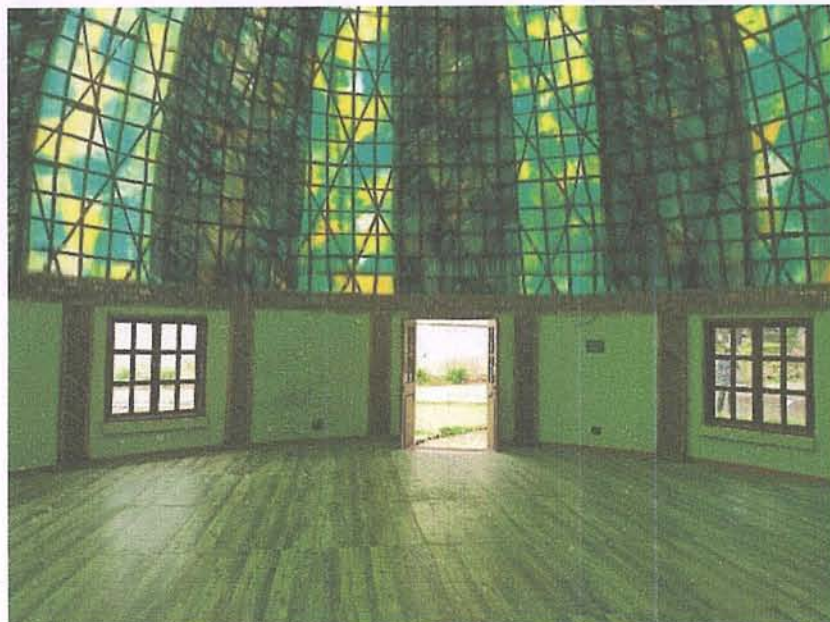
- Eco friendly Bamboo material usage
- Readily Availability of Material
- Usage of Bamboo for Columns, Beams, Foundation & Walls
- Non usage of Steel
- Non usage of Cement
- Green Building
- Low cost
- Low Energy usage in construction as compared to conventional house



**Photograph of Model Bamboo House: External View:**



**Photograph of Model Bamboo House: Interior View:**



## **CHAPTER IX RECOMMENDATIONS**

It is recommended to:

5. Install Roof Top Solar PV Plant
6. Replace 600 Nos T-5 Fittings by 20 W LED Fittings
7. To set target of reduction in use of paper by about 5 % on year-to-year basis.
8. To install a Bio Sewage Treatment Plant.

**ANNEXURE-I**  
**LIST OF PLANTED TREES**

| No | Name of the Tree  | No. of plants |
|----|-------------------|---------------|
| 1  | Babhul            | 1188          |
| 2  | Eucalyptus        | 3404          |
| 3  | Casurina          | 522           |
| 4  | Australian Acacia | 1869          |
| 5  | Subabul           | 60            |
| 6  | Neem              | 244           |
| 7  | Cashew            | 13            |
| 8  | Mango             | 10            |
| 9  | Jamun             | 16            |
| 10 | Umbar             | 42            |
| 11 | Kashid            | 117           |
| 12 | Shiso             | 385           |
| 13 | Vilayati Chinch   | 11            |
| 14 | Glyrisidia        | 715           |
| 15 | Shivan            | 76            |
| 16 | Karani            | 133           |
| 17 | Bamboo            | 20            |
| 18 | Tembhurni         | 10            |
| 19 | Sadada            | 19            |
| 20 | Waras             | 06            |
| 21 | Agasti            | 70            |
| 22 | Moha              | 31            |
| 23 | Bhendi            | 15            |
| 24 | Kadamb            | 61            |
| 25 | Pimpal            | 22            |
| 26 | Jakaranda         | 38            |
| 27 | Shiras            | 766           |
| 28 | Raintree          | 279           |
| 29 | Silver Oak        | 54            |





Ministry of Human Resource Development  
Government of India

## Swachh Campus Ranking 2019 of Higher Educational Institutions

The Yashwant Rao Chavan Maharashtra Open University, Maharashtra has been ranked  
Fourth amongst the cleanest Higher Educational Institutions in the  
Country in the category Non-Residential Universities - UGC and was  
awarded on 3<sup>rd</sup> December, 2019 at Prajnan (Auditorium), AICTE, New Delhi


  
R. Subrahmanyam

Secretary, Department of Higher Education,  
Ministry of Human Resource Development, Govt. of India

This is a Green Certificate



This award is in the form of a sapling planted by AICTE to increase green cover on Mother Earth in recognition of the institute's performance. We take responsibility for nurturing the plant which can be viewed by scanning the QR Code.

  
Ramesh Pokhriyal 'Nishank'

Minister of Human Resource Development,  
Govt of India



### **7.1.6: Beyond the campus environmental promotional activities**

The University organizes and conducts number of extension programs and activities to promote linkages and association between the university and the communities to sensitize the people in villages to identify their needs to bring out transformation in the surrounding rural villages.

#### **1. Impact of extension programs and activities conducted by KVK in Operational Villages:**

The distance learners and the practicing farmers actively participate in social service and farm training activities leading to their overall development. The university runs effectively National Service Scheme (NSS) and Krishi Vidyan Kendra (KVK) a farm science centre for agriculture extension.

The university undertakes various extension activities in the neighbourhood communities for rural youth and practicing farmers through Krishi Vigyan Kendra. The extension activities include training and demonstration in Agriculture, Horticulture and animal husbandry practices. KVK of university adopted following 8 villages namely Chakore, Bahadurwadi, Jategaon (khurd), Jategaon (budruk), Sarul, Ghanshet, Zari and Chirapalli from Nashik district.

The KVK provide training to more than 3000 to 4000 practicing farmers, rural youth and extension functionaries every year conducting 1 day to 30 days training programs. During the current year (from Jan to Dec.-2020), KVK provided training to 3604 practicing farmers, farm women, rural youth and extension functionaries in Nashik district conducting total 103 training programs spread over 261 days during the year.

Broad list of training programs and extension activities carried out to cover following activities in operational villages are:

- Crop Production Technology in major agricultural and horticultural crops
- Popularization of high yielding crop varieties in Paddy, Finger millet, Niger and Chickpea.
- Popularization of high density Mango cultivation.
- Soil Testing services to farmers for horticulture crop plantation.
- Distribution of Soil Health Cards among the farmers.
- Popularization of Bio-fertilizers and Bio-pesticides among farmers.
- Drudgery reduction for tribal women through farm scale mechanization.
- Establishment of self help groups of women for agro-processing.
- Establishment of Nutritional Garden on farmer's field.
- Improved Goat farming in the villages
- Poultry farming for meat and egg production.
- Exposure visit of farmers to modern and innovative horticulture farms.

Several noteworthy activities were carried out by NSS volunteers, which include tree plantation,

water conservation through digging of contour trenches, digging of pits for construction of toilets in the village, making paths and roads. At present, there are 3200 active NSS volunteers from 50 Learners support centres. Every year the University selects a village in the vicinity, organizes a camp for one week duration and undertakes cleanliness drive, village survey, and other constructive works. During the last five years, the NSS volunteers have organized camps in village Ghanshet and Kumbhale in Nashik District.

## **2. Impact of Extension Activities:**

The University is conscious of its responsibilities for shaping distance learners into responsible citizens of the country by making them aware of social issues. The university induct consciousness among the distance learners as well as in villagers about the significance of social issues like eradication of superstitions, conservation of water, *Swachh Bharat Abhiyan*, environmental pollution, personal health and hygiene, road safety, AIDS awareness etc.

The university has also organized several social activities like *Gram Swachhata Abhiyan*, Tree Plantation, Soil and Water Testing services, Farmers rallies and melawa, Jagar Janivancha, *Nirbhaya Kanya Abhiyan*, Pre-Marriage Counselling, prevention of drug addiction, Blood Donation Camps, Blood Group Check-Up and Health Check Up Camps etc.

The distinctive impacts in the adopted villages is, the villages have got new green coverage, increased groundwater level, clean roads, and surroundings and importantly villagers learned the importance of chemical free food production from their farms, the rainwater harvesting and importance of water conservation. The camps and awareness programs have improved their understanding of various social issues and health awareness. These activities helped the farmers, rural youth and distance learners to understand real-life problems, the dignity of labour, and helped them in developing team spirit and self-confidence.

We also sensitized the students to the various social issues and social responsibilities, which in turn helped them in their holistic development as responsible citizens with moral values. The University runs short programs through Krishi Vigyan Kendra like Fruits and vegetable production, Vermicompost Production, Bio-fertilizer Production, Bio-pesticide production, Botanical Pesticide production, Plantation management, Goat farming, Poultry farming, Rain Water Harvesting, Soil and Water Testing and other training programs to create environmental awareness amongst the students and villagers.

Thus the university undertake large number of training and extension activities through its especially dedicated Krishi Vigyan Kendra (Farm Science Center) and National Service Scheme reaching out to more than 5000 farmers including 3504 direct beneficiaries and more than 5000 distance learners during the year making huge impact on the thinking and the standard of living of villagers.



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